BRITAIN'S LEADING MAGAZINE FOR THE AMSTRAD CPC 464, 664 AND 6128

No. 32 MAY 1988 £1.25

NOT an official Amstrad publication!!

AMSTRAD ACTION

THE MOULD-BREAKING MAGAZINE FROM FUTURE PUBLISHING

CPC's – useful for ALL the family.

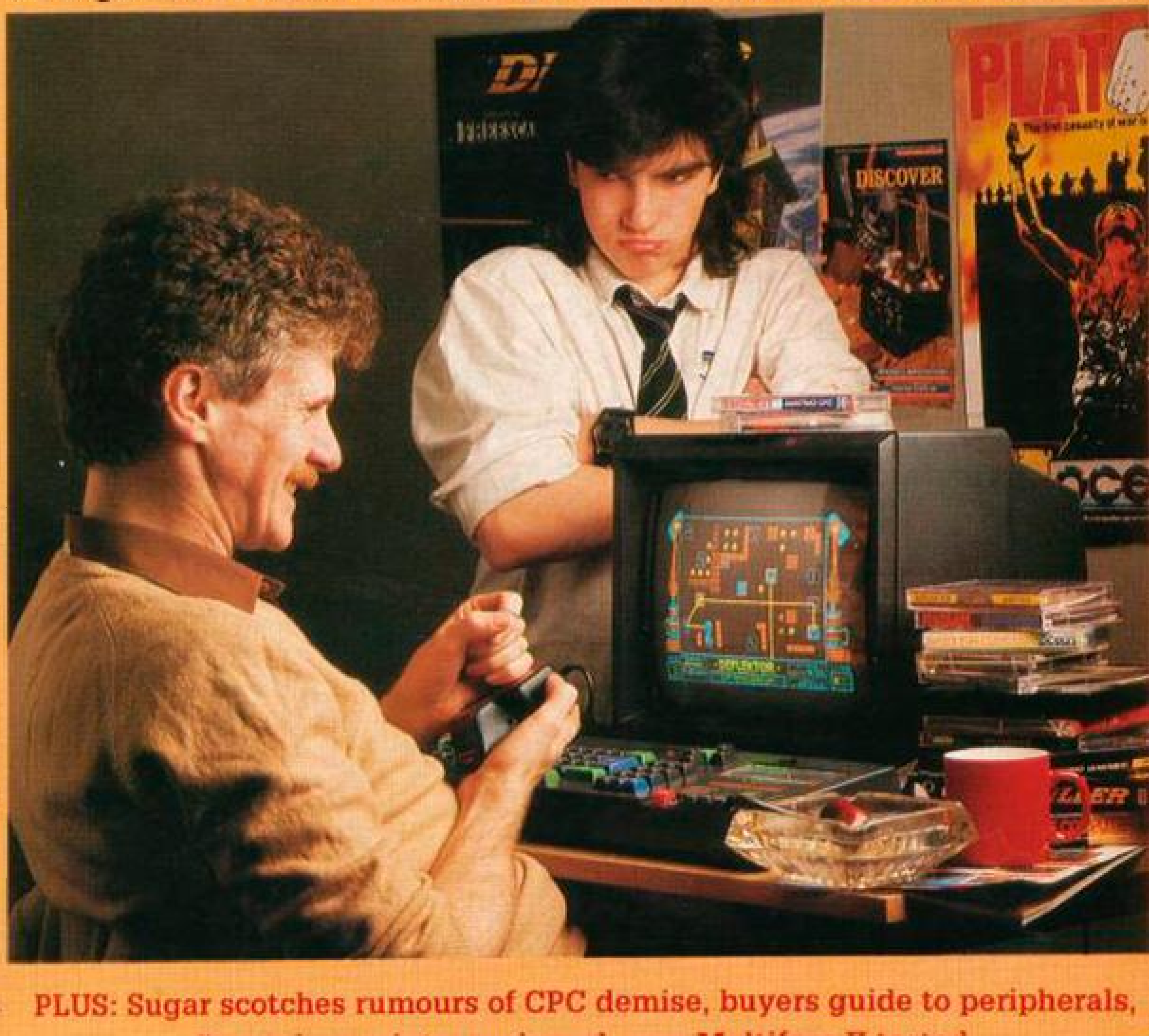
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THE LINE-UP

AMSTRAD ACTION MAY 1988

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NEWS● LETTERS

SERIOUS SIDE

SOFTWARE● HARDWARE● PROGRAMMING





ACTION & ADVENTURE

GAMES● MAPS● PILGRIM







INTERACTION

CREATED BY YOU AND FOR YOU

WRAPPING UP

THINGS TO BUY • BYE

A Little Learning

Educational software has long been something of a mystery on the CPC's, because of the general lack of it. Our feature in this issue reveals that, while there are good products to be found, you can hardly say the number of titles reflects the importance of the subject matter.

Why this should be is something of a mystery, after all many people buy computers because of, amongst other things, their potential as a learning tool. One obvious problem is that BBC computers are the most widely used in schools and therefore there is little software generated from that direction for other machines.

Perhaps the biggest factor is that computer owners are far more interested in learning about the machine itself than what it could teach them about non-computer related topics. After all when CPC's can run great games, word-processors, teach you programming, make music, produce pictures, and any number of other things, it is quite hard to see it as a surrogate teacher or revision aid.

Nevertheless there is still plenty of untapped potential in the educational field and it's something that we would like to encourage. So if you've got educational type-ins you think other readers could use, use CPC's in the classroom, or have any other ideas on the subject, let us know. Hopefully we can provide a forum for the exchange of information on this subject as we do on so many others.

Bob

Amstrad Action
Future Publishing Limited
4 Queen Street
Bath BA1 1EJ

Telephone 0225 446 034
Fax 0225 446 019

Editor: Bob Wade
Technical Editor: Richard Monteiro
Staff Writer: Gary Barrett
Art Editor: Ollie Alderton
Contributors: Pat McDonald, Steve Cooke, Bill Simister
Art Team: Gordon Druce, Sally Meddings
Publisher: Chris Anderson
Production: Diane Tavener, Jenny Evans, Claire Woodland

Subscriptions: Avon Direct Mail
PO Box 1, Portishead, Bristol BF20 9EG
Telephone 0272 842487

Mail Order: Clare Bates
The Old Barn, Brunel Precinct, Somerton, Somerset TA11 7PY
Telephone 0458 74011

Advertisements: Margaret Clarke
Byrom House, 58 Brinksway, Stockport, Cheshire
Telephone 061 474 7333

Cover photographs: Stuart Baynes Photography, Bath. Tel: 0225 66343
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Netherlands distribution and subscriptions: Info-Data Computers, Postbus 97, 3800AB Amersfoort.

REACTION

The section where you get your say about AA. Libel suits, love letters, letter bombs and all other reactions are dealt with by Bob Wade – so treat him gently. The address to send your letters to is: Reaction, Amstrad Action, 4 Queen Street, Bath BA1 1EJ. Remember we can't reply personally to letters, otherwise we wouldn't have time to produce a magazine each month. Mail-order enquiries or problems should be aimed at our Somerton address. Subscription problems (not order forms) are now handled by Avon Direct Mail. You'll find both addresses on Line-Up.

Wrong review?

In the *Challenge of the Gobots* review (AA 22) you had a picture of the packaging and at the bottom of the box it said C64/128. **Tragic**, you didn't actually review a Commodore game did you? I hope I'm wrong.

James Bryan
Cuckfield

Rest assured we only review Amstrad games – nothing else influences our judgement. However, when we receive a pre-production version of a game without the finished packaging, we may use the artwork from one of the other versions if the Amstrad specific artwork isn't ready.

Where to stick a stick

I was shattered, at least my joystick was (not literally of course – it's a Konix Speed King) at the reply to Stephen Trimmer in Problem Attic issue 30, concerning potential damage to the sound chip from joysticks.

My CPC 6128 is new with a green screen and to make matters worse I have just bought a JY-2 intending to use two joysticks. So where do I put my joystick now?

Tom Lynch
London

We didn't want to unduly alarm you. The problem mentioned appears to be very rare. You should be perfectly OK using your joysticks. However, to avoid any problems the two things to do are: not to plug or unplug your stick while the computer is switched on, and make sure there's no risk of discharging static electricity through the stick when you do.

Spanish main

In the issue 26 Tony Smith wrote about the cheap prices of software in Spain – now gone down in price from 875 pesetas to 600 pts, around £3.00. The main reason for these low prices is because of the "no frills" packaging of games. For example, *Ranarama* came in a fragile cassette, with a small picture on the front and a tiny sheet containing instructions. There are, however, exceptions but when a game does come with a double cassette box, e.g. *Barbarian*, then the prices rise to around 1500 pts – about £7.00.

However, in Spain there is a serious piracy problem – which is not helped by the fact that shops and markets openly sell pirated games (little more than a plain black cassette and photocopied cassette sleeve). Therefore the shops have to compete with the pirate copies, selling at about 450 pts. The situation is worsened by the presence of magazines slightly geared towards piracy, offering services such as a "hacking service" within their pages.

Ricardo Sneiras
Lymington



"SIRE – MORE SOFTWARE PIRATE SHIPS FROM SPAIN"

Copyrighting

What I would like to know is how to get a copyright on a program that I have written?

S A Warner
Bracknell

All you have to do is put a copyright message within the program.

DTP or not DTP?

I read with interest Richard Monteiro's reviews of *Stop Press* and *Microdesign* under the heading of Desk Top Publishing in your Christmas issue. He said of *Microdesign* "it is ideal for magazine and press release production". Exactly the application I had in mind. He also mentioned a bug in *Stop Press* for 464 users which tended to make me favour *Microdesign*. Mr Monteiro emphasized that he had a pre-production copy of *Microdesign* which only worked on the 6128. I subsequently contacted Siren who assured me that they now had a production version which was compatible with the 464 with memory expansion. As *Microdesign* is about half the price of *Stop Press* I had no hesitation in buying a copy.

In my opinion *Microdesign* is to Desk Top Publishing what Frank Bruno is to acting. The first problem is that it does not in fact run correctly on the 464. It is impossible to load drawing or icon files.

The second problem is with respect to text handling. In short, there isn't any. For example:

1. Text cannot be imported from another word-processor.
2. It is not possible to set margins or text windows.
3. It is not possible to set tabs.
4. No formatting facility.
5. No auto centering facility.
6. No word wrap or justification. Even worse, when you get to the end of a line the cursor just disappears off the edge of the screen – there is no automatic carriage return and line feed. Instead the cursor had to be brought back to the start of the next line using the arrow keys.
7. There appeared to be a good selection of fonts on side two of the disk. However, they are not fonts in the true sense of the word, but a collection of icons which are handled in the same way as any other graphic. When I eventually loaded one of these font sets (by copying it from side 2 to side 1 and renaming it BOOT.IC) my problems started. Each character/icon must be individually positioned to get an acceptable spacing between neighbouring characters. Also when using one of the fonts only the last character entered can be deleted with the delete key.

To be fair to Siren they have not as far as I know actually promoted this product as a Desk Top Publishing package. After all, they have named it *Micro "design"*. As a design/drawing utility it is probably very good value, but that is not what I wanted. I would say it is best suited to producing illustrations, fun drawings and even circuit diagrams as there is a full set of symbols provided. However, I feel it is totally misleading of Mr Monteiro to refer to it under the heading of Desk Top Publishing and to say that it is ideal for maga-

zine production. Please do not use the old excuse of only having a pre-production version. I would have thought you would have learnt a lesson after your earlier glowing review of the first bug-ridden *Pagemaker* version of *Stop Press* which had to be withdrawn from sale.

J Jopp
Erith

RpM replies...True, text handling is awkward and there are no formatting facilities – but magazine and press release production is possible. Micro Design is capable of mixing text and graphics within an A4 area, and sending the design to printer. That is the definition of desktop publishing. Nobody said it would be easy. If you want spectacular results, you'll have to be prepared to afford the time and be very patient. Remember you're paying half the sum of anything equivalent. Also remember the Amstrad is an 8-bit computer: desktop publishing was conceived on powerful 16-bit micros. It is amazing companies have managed to produce any sort of DTP package for the CPC.

Training aid

Having researched the market very thoroughly before purchasing, it was without doubt that the Amstrad CPC range of computers came to the forefront as the best value for money – having the software back-up which would admirably suit my needs. As a "computer illiterate" I was more interested in using commercial software than in programming for myself, though I must admit that the temptation to "have a go" had been too great to resist!

However, back to my reason for writing. I am employed as a technical instructor and as such I am responsible for producing student notes to supplement the lessons. Until now the notes have been produced on the same typewriter (manual, circa 1950) that I am using to write this letter, and which is also shared with several other workmates (budgetary restraints). As you are aware, this mode of hardware has its limitations, to say the least! So, for the following reasons –
a) to impress



"IT'S A TRAINING PACKAGE TO TRAIN YOU HOW TO TRAIN PEOPLE TO USE IT AS A TRAINING AID ... "

b) to sicken my colleagues and
c) to collect Brownie Points (not necessarily in that order)
and armed with *Tasword* and *Taspell*, I have now transferred all my notes to disk. The cost of the software, by the way, has been recouped by savings on Tippex. I borrowed a DMP 2000 to view an example of the finished result and, being suitably impressed, I have decided to purchase one for myself at the end of the month, if funds and wife permit.

Maybe I'm a perfectionist, but I feel that the notes could be made more visually attractive. It was with great interest therefore, that I read your articles in issue 29 on *Qualitas Plus* and *Qualitas Font Pack*. I'm sure that these programs are one answer to my problem. I realise however, that to obtain the full benefit from this software, I would require an 8-bit Printer Port. Could you please explain what this is, where and how does this item fit into the system, from where could I buy one (I can't find any reference in your advertising columns) and most importantly, how much

The Tape-to-Disk Transfer Debate

You ask, in your review of *Speedtrans Plus* for views on tape/disk transfers, and whether you should continue to support possible piracy.

I find it hard to believe that a serious pirate would mess about with a fiddling process like tape/disk transfer. Surely the theft that is damaging the industry occurs not with home computer equipment, but with commercial hi-fi, twin-tape equipment which is readily accessible and can turn out perfect copies, regardless of protection, at a fraction of the speed that it takes to play the original tape.

The "swapping" of programs between schoolmates, while serious and definitely NOT to be condoned, is a different thing. How many Amstrad owners does the average kid have access to? And do kids give something for nothing? It's my guess that piracy on the schoolyard basis covers itself because in order to swap a piece of software, you have to have an equivalent to swap it with, ie, more money over the counter.

The third, (ludicrous) type of piracy is the type reported in your pages, and these are the Collectors, and they do just that. Boasting of 4-500 games, surely they haven't had time to play many of them, and probably that's not the point. I suspect that they just collect. The tragedy is that they damage the industry in doing it by spreading illegal copies for the cost of a stamp.

Jim Palmer
Bournemouth

I own a 6128 and have long felt the five pound premium on disk games to be too high. Of course it may be that this is a commercially justifiable premium, but it does reduce the number of games that I buy. So if someone was to produce a 100% reliable tape-to-disk system I would buy it. But would I use it to pirate software? Let's be honest, the temptation would be there, but if the games were costing me five quid less than before I would be much less tempted. Frankly if a game is well presented who wouldn't rather have the original?

Ian Black
Midhurst

I agree piracy can be a problem. I was once the secretary of a local computer club, but lost interest when the emphasis turned from intellectual hacking to the mass copying of commercial programs, following the introduction of the BBC micro. Although such activities cannot be condoned and should not be encouraged, I do not believe they have a serious effect on the balance sheets of the producers. It seems to me that whether or not you review transfer programs, they will still be bought and abused. I observe that you seem happy to carry adverts for them, which makes your heart-searching seem a little forced. Not every user is a pirate, and you owe it to your readers to report on matters of such fundamental interest to disk users. Personally, I would like you to publish the protection method used on each review game and suggest the most likely transfer method, but I realise that's asking a bit much. You don't even publish transfer pokes these days.

Except in a few cases, I refuse to buy games on disk. Apart from the usual outrageous mark-up, I get irritated by the funny formats employed which prevent me using the free space. I have found few programs to be untransferable, given enough black coffee, patience and occasionally an in-circuit emulator. The DJL Speedlock was a considerable intellectual challenge, but it is now well understood by many people and can be quickly picked without the aid of special software.

Peter Hand
Southsea

I feel compelled to write and air my views on software copying after all the rubbish you keep printing on the subject. I'm sick and fed up of reading letters by people who want to take legitimate back-up copies of programs or transfer their own programs to disk, but would not do the same with somebody else's program. While I understand that *AA* cannot be seen to condone piracy, your comments when you reviewed *Speedtrans Plus* were pathetic.

Software piracy is not killing the industry just as home taping does not harm the record industry. People, especially children, only have a certain budget to spend on software and that's all. Swapping and copying programs only enables the person to get more games for his money. It does

does it cost?

Leaving aside the subject of training notes for the time being, I also read in issue 30 an article on *Parrotry Plus*, and was wondering if I could use this medium as a training aid. On the magazine cover there is a picture which has been produced, I assume, using the package. Could the screen used in that example be animated to show, step by step, the action of the piston and valves (not shown but presumed to be there), throughout the stages of the 4-stroke cycle? Could I build up a simple electrical circuits on the screen, without clearing the screen before adding to the circuit? It is possible to produce animated effects on an overhead projector, but this is difficult and time consuming for the amateur, and costly to have produced professionally. Therefore I must suffice with a series of static slides, and this leads to a loss in continuity when changing from one to the next. Furthermore, the colours available in slide-making are no match to the possibilities of the 6128.

Finally, having produced a final screen, could I download this to the printer as an illustration to the student's notes? After all, a picture paints a thousand words (none of which are in the *Taspell* dictionary).

Dave Graham
Kinston-upon-Spey

For info on the 8-bit printer port, turn to pages 28 and 29. In answer to your three questions about Parrotry Plus, yes, yes, yes.

Stick with CPC

In recent past issues of Amstrad Action, Reaction has raised many discussion topics and many of them have been very interesting. I would now like to bring another topic, related to one that has been going on for quite a time. It is about the 16 bit machines.

By now I am sure that you and everyone else is fed up with hearing about the 16 bit machines but I have to say I am very surprised at the way Amstrad owners have been going on. As we all



"THE FUTURE OF CPC'S ? — DONT ASK ME — READ AMSTRAD ACTION"

know the 16 bit computers are very good and have a lot of processing power. But with every computer there are two important things needed, each is no good without the other – hardware and software. Obviously hardware is useless without a program to manipulate it and use it to its full advantage, and likewise you cannot have good software without the hardware in the first place. What the 16 bit computers are going through is a stage very similar to that of the CPC. The CPC started out with very little software but excellent hardware and as we have seen it builds up to excellent choice of software in serious or entertainment categories.

CPC's are altogether brilliant. Many computers are good in some categories and others in different categories. For example the Spectrum is good in the entertainment side of computing, but as we know that is not all there is. The BBC was good (in its time) on the serious side, but again you need to be a good all-rounder. And as we also know the CPC is just that. With many games on the market, although not as many as the Spectrum or Commodore, the quality is very good.

I think more important than this is the serious side of computing and the CPC offers an excellent range in that category. Of the serious products on the market there are programming languages: Pascal, BCPL, Logo, and C. There are many spreadsheets, databases, word-processors, graphic programs and many more. Personally I would not think of trading in my Amstrad CPC 464 for another computer for a long time.

So to all Amstrad owners, please don't give up hope in your CPC's – there is still a lot of life left in them, if you only give them the chance. And finally to Amstrad Action, keep up the good work, if any magazine can keep the CPC's alive you can.

Stephen Parkinson
Stoke Newington

Keep your lids on

I'm sorry but I've had enough! CPC owners are just so paranoid. I have no doubts about the CPC's continuation and growth. I have a 6128 and am currently expanding this system because of this confidence.

Don't laugh but I had a TI 99/4a and when it was about to go there were very definite signs. Software houses stopped producing programs for the TI 99/4A and magazines stopped printing listings. This, so far as I can see, has not even started with the CPC's.

not mean that they are going to spend less on software. Who's going to lend them games if they don't buy their fair share. Introduction of a foolproof anti-copying device would not get people to spend more money on software. Top quality software would sell more copies but mediocre software would not sell at all.

I, like many other people, get more pleasure out of transferring games to disk than actually playing them, and I don't care whether its my game or somebody else's . I have probably 200 games on disk or tape but to value them at £2000 as Edward Reid did in the March issue is stupid. They are not worth anything like that. If I lost half of them tomorrow I would not be unduly bothered.

What software houses forget is that it is only the attraction of lots of free software that entices many people to buy computers the in the first place. Stamp out software copying and their markets will shrink rather than expand – look how many games consoles have been sold compared with computers.

Terry Ellis
Bristol

You invited comment on your policy of reviewing transfer routine utilities, so here goes. First you have to decide what sort of readership you have. Are we potential crooks and pirates or people interested in computers and computing?

AA caters for two kinds of CPC – one with tape, the other with disk and either can have both. Some of us have both – usually as a result of progression in interest and/or knowledge and it is perfectly natural to want to transfer programs to the speedier running medium.

Who is suffering? The profit has already been made on the sale of the program to me and I am still the one who is going to use it. While I have bought some updates, it is extremely unlikely that I would buy the identical program twice.

Then again, what about all the tapes I have from software houses that have gone defunct, or do not offer enhancements? I have some marvellous programs on tape – *Screenplay* by MacMillan, *Officemate* by Gemini, *Machine Code Tutor* by New Generation; but none of them gets the use it should simply because it's on slow, unreliable tape.

I know little (well, nothing) about how programs work – I have never bought transfer utilities, because I cannot see how putting the information from one storage medium to another will work. Perhaps its different with simple games; but utilities and better games need several references back to the loading mechanism and they probably won't work.

As you see, I am very ignorant of these things and it seems to me that far from ceasing to review utilities that help, you should give advice on using them. You could give clear, simple explanations just as you do for beginners in basic, and say what they will and won't do.

First religion, then medicine, now commerce have used mystique and fostered ignorance to their benefit. You should remember your calling – to dispel ignorance and mysticism.

Peter Daniels
Worthing

I know the rumour about the 16 bit machine is worrying a lot of people but put yourself in Mr Sugar's position. You have a very successful computer, CPC 464, and have just spent a whole lot of money on development of a new machine. This new machine has no software base and may not get any software base. Would you risk your company on the latest craze of 16-bit machines or do you stick by a known success? I personally think that if Mr Sugar were not intelligent enough to realise this then he wouldn't have sold many of those famous Hi-Fi lids of his. I rest my case.

Peter Telford
Wigan

Heads up

My children's 464 is rather old now and has just had the head re-aligned by a computer repair shop. Being an old 464 I did ask for a new tape deck to be fitted, only to be told that Amstrad are terrible for supplying spares. Can you help with the address of a supplier.

C Castle
Horningtoft

All CPC spare parts are available from CPC, 194-200 North Road, Preston, Lancashire PR1 1YP. Phone (0772) 555034. If you pass on this information to the computer repair shop they should be able to get CPC's catalogue, order the relevant parts and fit them for you.

Project plea II

Referring to the letter from I S McCulloch and your note adding to it (AA30) , I am writing to say I would love to see regular articles in AA which deal with electronics and hardware projects.

I am not an electronics expert, but I am interested in finding out how to use my 6128 to control external projects. I would like to build something that can record air temperatures, measure rainfall etc, and maybe even predict the weather, if this is possible! I hope other readers are as interested as I am and I eagerly await the first article!

Amy Huxtable
Colchester

PS Is it possible to build something to keep young brothers out of your room?

We've had quite a lot of feedback on this subject and do intend to do projects in the future. If you've completed a DIY bit of hardware creation for your CPC and think it's within the scope of most readers, then let us know and perhaps we can come to an agreement involving large sums of money. Failing that we'll pay you our usual fee.



"...AND THIS ONE CONVERTS THE 6128 INTO A CRAY-2"

CPC 6512?

Can the article that was in issue 30, about how to change your 464 into a 6128, be used to change a 6128 into a 8512.

Thomas Riches
Norwich

Unfortunately, no. Besides it sounds a little like trying to turn gold into lead.

Monitor in tights

I have discovered a cheap way to make an anti-glare filter. Firstly go out and buy some large, dark coloured tights. Then cut a square out of the leg large enough to fit the screen of your monitor. Stick it to the edges of the screen using double sided sticky tape. Crude but reasonably effective, as the fabric acts in the same way as the expensive mesh filters to cut out some of the glare.

Robin Brown
Inverness

AA Censored

I have just received a back issue (AA 25) and having read your *Death Wish III* review, I was moved to write to you. Your overall comment was 30% "The worst type of game – boring and in bad taste" and yet *Renegade*, a game having equal if not more violence, was given 90% and "Tremendous quality arcade conversion" as a comment.

What I want to know is how can you possibly justify giving two superbly programmed games of the same type completely different reviews? The same goes for games such as *Barbarian* by Palace and *Green Beret* by Imagine. All are really well programmed and feature more violence than an episode of "Miami Vice". Why did you give *Death Wish III* such a bad review? In my opinion, it is an excellently programmed game which is just as good as *Renegade* and *Barbarian*.

I happen to love violent computer games, and I hope the BBFC (British Board of Film Censors) doesn't decide to slap an "18 certificate" on every game of this type.

Stephen Trimmer
Broadstairs

We didn't like Deathwish III because the gameplay, in our opinion, was boring. The gameplay in Renegade, again in our opinion, was good. The graphics are also better on Renegade. The issue of bad taste is very simple: in Renegade you are fighting "bad guys" and there is a little blood (coloured blue), whereas in Deathwish you can "accidentally" shoot police, old ladies and other innocent bystanders while merrily blowing people into piles of blood and bones using a bazooka. The graphics as ever aren't particularly gruesome – but it's the thought that counts.

A good Incentive

A few weeks ago, I sent a letter to Incentive asking for details on releases. Within 3 or 4 days I received a package from Incentive. It had inside: info on *Driller* and Freescape, order form/price list, order form for *Driller*, 4 posters and 3 small stickers.

I was very impressed with what I received and some of it made me want to purchase *Driller*, but was it too hard for a 12 year old who is no computer whizzkid?

I wrote again and asked Incentive. This time I received a handwritten note (very honest) saying it was hard but people of my age seemed to have enjoyed it. Also there was a *Driller* poster, even more info on *Driller* (including map) and a pricelist.

Right, that was it, *Driller*. To get to the point, why can't more software companies be more like Incentive? Instead of photocopied pricelists why can't they send information?

J Perkins
Bideford

Alien wife form

What about some articles of benefit for disabled users especially robotics? And a plea to you teacher/programmers out there – how about sending in some type-ins for those children with moderate to severe educational problems in reading, writing and maths? The software houses do not trouble as there is no money in it. Surely out there somewhere there is a knight in shining armour who knows what is needed and can help.

I wrote to you sometime ago about a problem regarding justification on *Amsword*. After I found further problems with programs going haywire, it took a while to trace the causes and only because my son encountered similar disruptions on his radio controlled models. We found the cause to be both illegal Citizens Band radio enthusiasts using illegal AM frequencies and FM users with their aerials incorrectly set up. We have resolved the problem. The illegal user was last seen vanishing westward at a rate of knots with a verbal boot up the backside, and the latter complied with our request to re-tune his aerial quite happily. He is gradually being won over to the more sensible pastime of computing. So if you keyboard bashers out there are experiencing weird patterns, programs locking, crashing, your screen being wiped clean, or not obeying commands – look no further. Identify the offender, then put on your missionary suit and enlighten him about the true religion (computing) and make a convert.

Got to go now as the Alien wants to vacuum the room. "The Alien" – that's the missus, so called as she is out of this world.

F Budd
Southampton

SOFTWARE WINNER

Helpline

Where eager Amstrad experts volunteer aid to fellow readers having problems

If you too feel helpful, just send us your name, address, phone number (say so if you don't want it to be printed) and subject on which you want to help. Please write on a postcard or the back of a stuck-down envelope to simplify administration here in the office. Send to: **Helpline, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ.** If you are asking for help, make direct contact with the appropriate Helpliner - don't pester your usually-patient (but pressed) editor. By post, you must include a self-addressed, stamped envelope for the reply - otherwise you won't get one. And if you telephone, stick to socially acceptable hours!

Reminders: Anyone invloved in piracy is not welcome on this page and if problems arise they will be removed. Keep it legal, it's in everyones interest. A plea to helpliners – if you do receive SAE's from people, please return them with some acknowledgement. Lastly a reminder that if you want to come off the Helpline you should write and say so.

Laser Basic
Trevor Prince, 46 Hillport Ave, Porthill, Newcastle, Staffs, ST5 8JZ

Knight Tyme, Speldome, Pipeline 2, Harvey Headbanger, Alien Highway 2, The Apprentice, International Rugby, Raid, Mutant Monty, Donkey Kong, Sweevo's World, American Football, Jet-boot Jack, Blagger
Roger Murphy, 6 Glenageary Woods, Glenageary, Co Dublin ☎ (0001) 80 6858

Adventure programming
Simon Forrester (age 13), 15 Halcroft Rise, Wigston Magna, Leicester, LE8 2HS

Tips, pokes, maps for Rebelstar, Xcel, Magic Knight Trilogy, Equinox, Zoids, Antiriad, Sentinel, Aliens, Mercenary, Tau Ceti, MGT, Dragon's Lair, Icon Jon, Nether Earth, VB Cave Adventure, asking for help on Zombi, Driller
Steve McClay, 32 Lycett Rd, Wallasey, Merseyside, L44 2DA

Adventures generally, and GAC specifically. Writing, testing, debugging programs. Solving problems, especially graphic/strategy games (Xor etc). Pokes for many games. Word-processing and problems therewith. Language translations, Eng-Fre, Fre-Eng, ditto German.
IR Murphy (aka Smurf the Worlock), 25 Craven St, Accrington, Lancashire, BB5 0SE

Art Studio, Mini-Office 2, DMP 2000 - CPC 6128
David Marek, 2 Camus Road West, Edinburgh, EH10 6RB

Chess programs, Tasword 6128, Print Master, Toolkit (Beebugsoft), Advanced Art Studio, Mini-Office II, Advanced Music System, disk utilities (and writing them yourself), RSXs and firmware calls
Alastair Scott, 30 Talbot St, Grangemouth, Stirlingshire, FK3 8HU

Programming in Basic and machine-code - 464
Michael Ewan, Hall Bank, New Hutton, Kendal, Cumbria, LA8 0AU

Adventure writing --GAC, Quill etc. Also play-testing and evaluation, program listings etc. Anything at all to do with writing adventures!
Pat Winstanley, 13 Hollington Way, Wigan, WN3 6LS

Basic, Forth, assembler, firmware, graphics, digital electronics - 664
Tim Mo, 180 Brookland Terrace, New York, North Shields, Tyne and Wear, NE29 8EP

Tape-to-disk transfer, infinite lives, maps, adventure solutions, French games, Amstrad program guide
Phil Maxfield, 40 the Brow, Brecks, Rotherham, S Yorks, S65 3HP ☎ (0709) 54 5055

Basic programming (mainly utilities but some games)
Mark Bonshor, 4 Stoop Lane, Quorn, nr Loughborough, Leics, LE12 8BU

Basic programming, useful calls and pokes, hacking, tape-to-disk, Melbourne Draw, supersprites, repairing joysticks, tape loading, Basic scrolling messages, sprites in border, ripping out title pages, music and effects from games
Carl Harker, 38 Lyndon Ave, Blackfen, Sidcup, Kent, DA15 8RJ

Basic, Logo, Laser Basic, CPM, Fig-Forth, simple machine-code, GAC, disk or tape loading, tape-to-disk
Edward Reid, 157 Ladyloan Ave, Drumchapel, Glasgow, G15 8RX

Bridge clubs - scoring on Mitchells, aggregate and Howells, name and address lists, library books, master points (calculation and certificates) - all CPCs using CPM for Masterfile and Superscript
FB Brighton, 30 Ranmoor View, 410 Fulwood Rd, Sheffield, S10 3GG ☎ (0742) 30 7555

Basic programming, printing problems (on DMP 2000), loads of games, pokes, maps, type-ins, machine-code
Guy Sanders, 270 Willesden Lane, London, NW2

Any aspect of writing a fanzine
Richard Hannah, 48 James St, Helensburgh, Strathclyde, G84 8XG ☎ (0436) 3310

GAC writing and mapping adventures, Basic, machine code Dbase II, Dataflex, Turbo Pascal, poking, moving machine code around in memory.
LV Townsend, 61 Lowergate Road, Accrington, Lancs, BB5 6LN. ☎ 0254 382349

Programming basic 1.0, sound (some enveloping), graphics (collision detection and animation), interrupts, tape and disk filing, printer commands — DMP 2000 — printing of listings, screen dumps, letters (phone for details of cost before sending), DK'tronics speech synthesiser, writing simple databases searches and sort routines
Gavin Manning, 20 Windsor Rd, Wanstead, London, E11 3QU ☎ 01-989 8843

C&G 747, HNC Computer Studies, serious users
John Wharram, 61 Silver Crescent, Chiswick, London, W4 5SF

Machine-code, CPM, hacking - 6128
Tony Hoyle, 11 Dorset Rd, St Annes, Lancs, FY8 2ED ☎ (0253) 72 7368

Basic, machine-code, especially graphics - 464
PJ Higginson, 194 Turton Rd, Bradshaw, Bolton, Lancs, BL2 3EE ☎ (0204) 58907

Basic, some machine-code (will print listings for 50p + 5p/page +sae) -- 6128
Andrew Smith, 5 Station Rd, Foggathorpe, nr Selby, N Yorks, YO8 7PU ☎ (0757 85) 540

Basic, simple machine-code
Duncan Ellis, 6 Clifton Terrace, Ilkley, W Yorks, LS29 8ED

Laser games, assemblers, firmware
Martin Packer, 393 Whitton Ave East, Greenford, Midx, UB6 0JU ☎ 01-935 6600 x4283 or 01-423 3452

Spellbound, Eidolon, Dragon's Lair
Scott Miller, 7 Inverness St, Drumoyne, Glasgow, G51 4EW

CPM stat, DMP 2000, Cobol, Nevada Cobol, Turbo Pascal, Locomotive Basic, colours from Basic, disk to tape, disk to disk, Tasprint, databases - 464
Allen Reavie, 22 Mourneview St, Portadown, N. Ireland, BT62 3AW

Machine-code programming
Jim Tripp, 24 Orchid Close, Taunton, Somerset

Machine-code, Basic, Logo, CPM, graphics, sound, most CPC games
PJ Cook, Prestel 011 110 750

Programming (Basic, some machine-code)
Jeffrey Hunt, 2 Deweys Way, Gillingham, Dorset, SP8 4BW

Listings and text files 9p per K. Send a disk or tape. NLQ doubl. Screen dumps 50p. Postage free if over £1.00 else add 33p. Penpals computer matched. Free advice on Basic programming and adventure writing. Debugging service, list of ideas for school programming projects, GAC help (all free).
Daryl Ward, 3 Pineways, Appleton Park, Warrington, Cheshire, WA4 5EJ. ☎. 0925 64805 between 6.30 and 7.30pm

Hints, maps and pokes for Jack the Nipper, Get Dexter, Sorcery+, Zub, Grand Prix Simulator, Seabase Delta, Doomsday Blues, Knight Tyme, Enchanter, help on downloading games from Microlink.
Daniel Webster, 17 Chandos Close, Buckingham, Bucks, MK18 1AW.

Basic programming 464, machine code 464, Maxam on rom, DDI-1 disk drive and using 3" disks.
Martin Wilcocks, 38 Ambleside Close, Bromborough, Wirral, Merseyside, L62 7JF. ☎. 051 334 8812

Programming (Basic and machine code), graphics, sound and music, some hacking, debugging programs, Amstrad Light Pen.
Andrew Stevens, 4 Kingston Avenue, Acklam, Middlesborough, Cleveland, TS5 7RS. ☎. 0642 813052 - not Tues or Fri evenings or during college hours.

Dizzy, Destructo, Rambo, 3DC, Eagles Nest, Black Magic, Trap Door, Renegade (levels 1-5), Gryzor, Indiana Jones, Ikari Warriors, Space Harrier, Gunfright, Combat School, Starstrike II, Trailblazer, Barbarian, Bruce Lee, Exolon, Kane, Jack the Nipper, Chronos, Freddy Hardest, Army Moves, Rampage, Rygar, Masters of the Universe, Agent X2, Energy Warrior, 720, Platoon.
J Redfern, 10 Oaktree Close, Mansfield, Notts. NG18 3EN

AMSCENE

Monthly update on what's new on the CPC scene

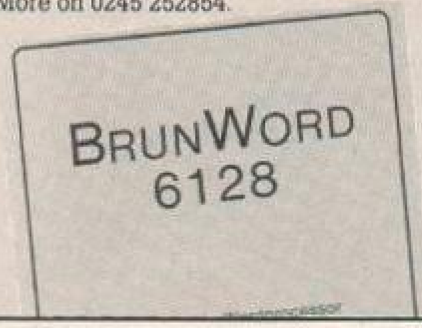
Database for BrunWord

Brunning Software, responsible for the *BrunWord* word-processor, have announced *Info-Script* – a database that has been integrated into the 6128 version of the word-processor. The whole system is memory resident.

It is possible to have *Info-Script*, *BrunWord* with all its facilities, 1000 names and addresses, and six pages of text all in the memory. The word-processor and database can be toggled between without the need for disk access.

Info-Script measures the computer's memory and sets its configuration accordingly. It is compatible with the Dk'tronic 256k memory which, if present, can hold roughly 3000 names and addresses, six pages of text and the spelling checker with its 30,000 word dictionary.

The database can access only one file at a time which is held in the computer's memory, but this can be split into four sections; each instantly available. This means one file of data could contain 760 customer names and addresses, 290 items of stock and 51 suppliers names and addresses. *Info-Script* costs £46 with *BrunWord* and *Brun-Spell*, but users who have or prefer to buy the word-processor first can update for £22. More on 0245 252854.





Sugar boosts CPC

Here's a great quote from Alan Sugar, ferreted out by the worthy newshounds on our sister magazine ACE. When asked whether rumours that production of CPCs in the Far East had stopped were accurate, he replied "No it is not true. We are making more than ever before". Confirmation, if any were still needed, that the CPCs are alive and kicking.

Firebird shuffle

Firebird have rationalised their game labels into three sections – Silverbird, Firebird and Rainbird. Silverbird is to assert its separate identity as the budget range.

Firebird and Rainbird will remain much as before but are also undergoing a revamp of their presentation. Firebird has a new logo and inlay design, while Rainbird is to have "an attractively chunky and compact box". Looks like the revamped labels will be hard to miss.



No price rise for CPCs

Japanese-made dynamic ram chips have recently been undergoing hefty price increases, due to an international shortage of the silicon slithers. However, Amstrad say this will not affect current prices of the CPC computers. The reason for the chip price hike seems to stem from production cutbacks at the Japanese suppliers, following US Federal action.

However, like other manufacturers, some of Amstrad's hardware has been upped in price – their PC's in particular. The increases only affect the double floppy and hard disk machines. Approximately £50 (excluding VAT) will be added to the machines in question. The rises are effective from April 1st (no joke).



Designer demons

Dataphone Ltd, the modem specialists, have launched a new advanced model of their Demon II modem called the Designer. It has all of the features of the Demon II with a few extras added. The Designer has an auto dial facility, whether from the keyboard or a directory and an auto-answer for when it's left unattended. The new features are: a call progress monitor that allows you to hear what's happening on the line, and a telephone socket on the rear of the modem so that a telephone can be connected in parallel with it. It will cost just under £100. The Designer and Demon II are available from: Dataphone Ltd, 22 Alfric Square, Woodston, Peterborough, PE2 0JP.



Silicon pull out

Silicon Systems, who are best known for their high capacity disk drives, are pulling out of the CPC market. According to managing director Tim Kay, Silicon are moving into the 16-bit market. "The PC, Atari and Amiga market are very strong. It is only logical that we should head in that direction."

Apparently the withdrawal hasn't been prompted by the CPC market going badly, but because Silicon are just too busy with the expanding 16-bit market. Kay commented, "any orders for CPC Megadrives we receive will be honoured. We shall still sell the odd CPC peripheral, but we won't be advertising the fact."

Silicon have recently moved from their Manchester offices to a new site in Cheshire. Other branches are to open in Birmingham and abroad. Their new Cheshire address is Tudor Industrial Estate, Dukinfield, Cheshire, SK16 4RN. Telephone 061 3431765.

48-pin printer

At the recent Hanover computer fair in West Germany, Epson held the first public viewing of their 48-pin serial impact dot matrix printer. Although still in its infancy – and no decision has been made by Epson as to whether the product will be made available in the UK – it is an exciting jump in printer technology. But the question is how long will it be until dot matrix printheads manage to force their way through stationery?

Half life

Maxam 1 1/2, Arnor's follow up to their successful *Maxam* assembler, is now ready. Available on rom only it costs £29.95. *Maxam 1 1/2* has been designed to work with *Protext* – it is a complete replacement for the earlier *Maxam* (£10 to upgrade). The original *Maxam* text editor has been removed to make room for extra features in the rom. *Protext's* text editor is used to create and store assembler source code.

The new options fall into three categories: debbuging facilities, external commands and assembler directives.

The debugging facilities include improved diagnostic information at breakpoints, the ability to use *Protext* and external commands while at a breakpoint, and individual registers can be modified. The glaring omission is the facility to single step through code. Arnor may include this option in future versions if they feel users require it.

Extra commands include |MEM to alter himem, |LOAD to load a file anywhere in memory, |ASM to assemble a file, |DIF to disassemble code to a file and |J to jump to a routine in memory. An intriguing command, |QWXCL, also exists. This simply prints a message from Arnor thanking everyone for their support over the years. But what does QWXCL stand for? When managing director Mark Tilly was quizzed he claimed that it did mean something, but few people would understand what. Any guesses?

Arnor are located at Protext House, Wainman Road, Peterborough, PE2 0BU. Telephone 0733 239011.

Extra for Protext

Peterborough based Arnor ann-ounced two new products for use with their popular word-processor, *Protext*, at the Amstrad computer show held in February. At the time details of the packages were scarce. Both titles, *Protext Filer* and *Protext Office*, are now available.

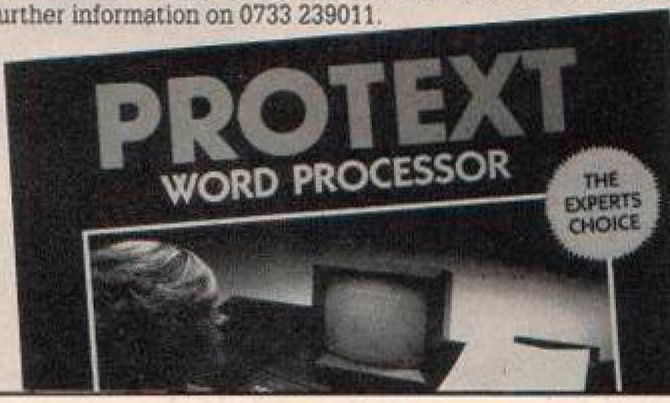
Protext Filer – which is being pushed at £24.95 – enables *Protext* users to keep address lists and other datafiles in order. It includes datafile management, file sorting, label printing and mailmerging. *Protext Filer* has most options that users would require from a database. The file sorting section sports alphabetical and numerical sorting, fixed or variable length fields and multiple key sorting.

Filer is menu driven and works from within *Protext*, which means there is no need to learn new commands.

Protext Office contains all the features found in *Protext Filer*, plus an invoice generator originally developed by Arnor for their own use. It's main attraction will be to small businesses as it is easily configured for individual requirements. Invoices, credit notes, delivery notes and statements can all be produced.

Only the address and product details need be entered into *Protext Office*, the totals and VAT are calculated automatically by the program. *Protext Office* sells for £34.95.

Either the CPM Plus version of *Protext*, or the rom or disk version of *Promerge*, is required to make use of Arnor's new products. Further information on 0733 239011.



NEW RELEASES

Budget snippets

On the road from Mastertronic in forthcoming months are *Rollaround*, *Aliens* and *Dun Darach*. *Aliens* and *Dun Darach* will appear on the re-release label, Ricochet. All will fetch the usual budget price of £1.99 except *Dun Darach* which is to be set at £2.99.

Out now at £1.99 from Firebird on their Silver Range are *Zolyx* and *Demons Revenge*. Due shortly are *Muggins the Spaceman*, *Ninja Scooter Simulator*, *Pogo Stick Olympics*, *Biospheres* and *Skateboard Kidz*.



Rasputin, the 3D arcade adventure that received a Mastergame award in issue seven, is to be re-released by Firebird at £1.99. Then, at £7.95, it represented good value for money. Today at £1.99 it's unquestionable value.

Blue Ribbon are to re-release *Steve Davis Snooker* at £1.99 on cassette and £4.99 on disk.



More £1.99 games are on the way from Power House. First on the list is *Stairway to Hell* which involves a journey through various caverns in the earth's core in the search of Beelzebub himself – or so we're told. *Street Machine*, previously from Software Invasion, is another zooming your way.

Spindrone – a horizontal shoot-em-up – is available from Atlantis. Suggested retail price, £1.99.

Players have *Shanghai Karate* to add to their collection. It's a multi-load chop-em-up with simultaneous player mode. And all for the price of £1.99.

Ocean Conqueror, a submarine simulator, is due for release from Hewson. It appears on their Rack It label at £2.99.

Ten packs

Three staggering 10-game compilations have just hit the streets. The first is from Gremlin, *10 Great Games*. This will feature *Mask, Auf Wiedersehen Monty, Death Wish 3, Final Matrix, Samurai Trilogy, Basil the Great Mouse Detective, Jack the Nipper II, Convoy Raider* and the *Duct* – a powerful line up.

Amstrad Action readers will recognise the *Duct*: it appeared on the Christmas cover cassette featured in issue 28. Price for the compilation will be £9.99 on tape and £14.99 on disk.

Elite are one of the other software companies with a compilation up their sleeve. Their 10-game catalogue, called *Top 10 Collection*, comprises *Sigma 7, Saboteur I and II, Critical Mass, Airwolf, Deep Strike, Combat Lynx, Turbo Esprit, Thanatos* and *Bomb Jack II*. Elite's pack is also priced at £9.99 on tape and £14.99 on disk.

Not wanting to miss out on the fun the Edge have announced a 10-pack compilation – *All-Star* – which will contain *Shadow Skimmer, Inside Outing, Bobby Bearing* and *Warlock* amongst other titles. Price is £8.99 on cassette although this one isn't available now, but keep your eyes peeled.



Putt in your place

Mini-Putt, by Accolade, has arrived in a shop somewhere near you. It's a golfing game with a difference, it's based on crazy golf. There are many courses to play, each one has a theme to it, movies, countries etc. If you want it you'll have to pay £8.95 for the tape and £14.95 for the disk.

Armless and legless

Just out on the streets from Firebird is *Gothik*, a game of wizardly reconstruction. You play either Olaf or Olga the viking, in an attempt to recover the seven parts of the Grand Wizard and put him back together again. There are loads of spells and potions that can be collected to aid you in your quest. It's priced at £8.95 on tape and £14.95 on disk.

Frozen tanks

Electronic Arts have just released *Arctic Fox* on the CPC. It's a 3D combat game in a similar style to the old *Battlezone* game. A race of aliens have landed in the arctic and are in the process of changing the atmosphere to a form that is breathable by them. Unfortunately the change will be fatal to the human race. It'll cost you £8.95 on tape and £14.95 on disk.

Hungry rings

Cascade are unleashing *Ring Wars* on the unsuspecting public. The Ring Worlds are computer controlled devices that have a bug in their programming. They are supposed to seek out uninhabited worlds and drain them of useful materials. Unfortunately the bug means that they're draining every planet they come across, including the inhabited one that you live on. *Ring Wars* is a 3D vector graphics shoot-em-up that'll cost you £9.95 on tape and £14.95 on disk.

Coin-op conversions

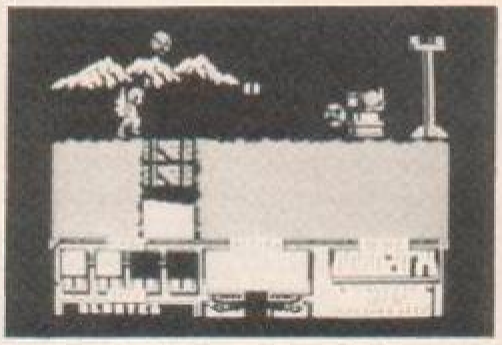
Activision have acquired the licenses to four recent arcade hits: *Afterburner, R-Type, SDI* and *Time Scanner*. *Afterburner* is a 3D shoot-em-up with you at the controls of a sophisticated war plane. It's due for a Christmas release. *R-Type* is another shoot-em-up with you at the controls of the powerful R-9 interstellar space craft. *SDI* is another shoot-em-up where you control a satellite in part of star wars defence network. Autumn should see both in the shops. *Time Scanner* is a pinball simulation with realistic ball movement and handling of the flippers.

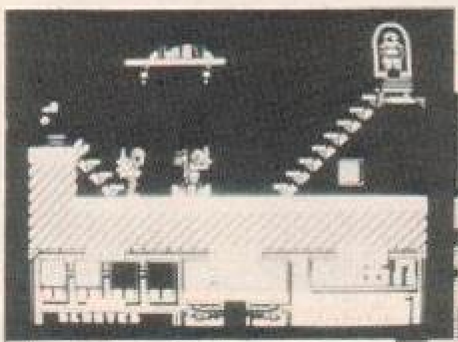
Something to get your teeth into

Three new games from Gremlin will be out on the streets by the time you read this. The first is *Vampires Empire* in which you are Dr Van Helsing, famed vampire hunter, in your quest to rid the world of Dracula and his cronies.

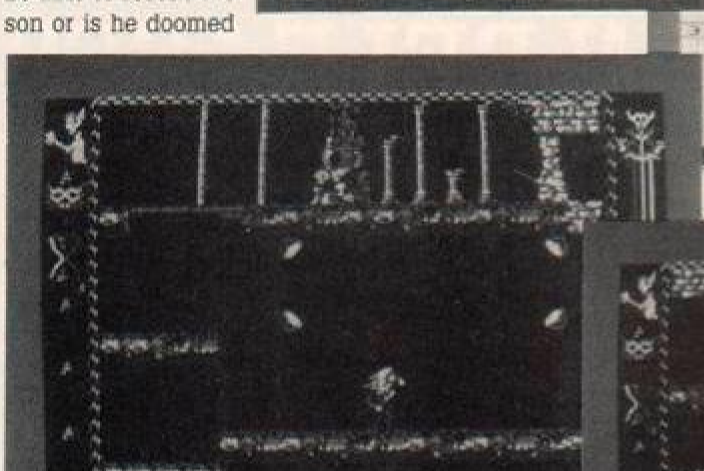
Second is *Alternative World Games*, which features some of the more unusual sporting events like, pillow fighting, sack racing and boot throwing.

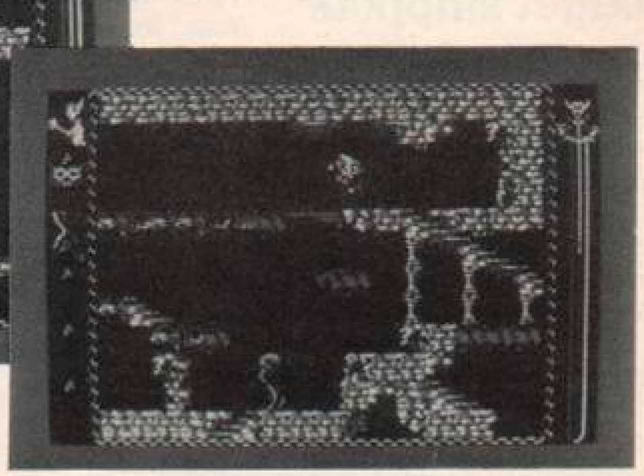
Finally there's the third game in the series based on the *Mask* cartoon series, *Venom Strikes Back*. Venom have kidnapped Matt Tracker's son and are holding him to ransom. Will Matt be able to rescue his son or is he doomed to die trying? All three games will cost £9.99 on cassette and £14.99 on disk.













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Educating Arnold

Educational software has never been a strong point of the Amstrad CPC computers. However, there are numerous companies with various packages to their credit, trying to bring a little learning to the CPC's. We've gathered together all the available software so that Richard Monteiro can go back to school to grade educational software.

With exams just round the corner, the nations youth will be leaving the keyboard of their computers for the pages of their school books. But think back, surely one of the reasons you bought a CPC computer was because it had potential as an educational tool. So what do you do with your computer? Play games? Program? Word process? Now is the time to get back to your keyboard; there are decent educational packages about. It's just a matter of sifting through the masses.

You can get hold of educational software for just about every age-group: from tiny tots to the adult learner. We have split the sections into specific age-groups. It makes more sense than lumping them all together. The obvious place to start is with software for the very early learner.

Infant School

Surprisingly there's a healthy selection of software for the very young. At one point this end of the market was cornered solely by Bourne (who were fortunate enough to have their wares sold by Amsoft). Since then other companies have done their bit.

Happy Letters
Happy Numbers
Happy Writing

Bourne, £9.95 tape, £14.95 disk

Happy Letters features a face – happy when a question is answered correctly, sad when answered incorrectly. Letters or words are displayed on the screen which the child must copy by pressing the corresponding key on the keyboard.

Happy Numbers instructs the child to recognise numbers and become accustomed to counting. Only numbers from 1 to 9 are used which keeps things as simple as possible.

Again the happy face stars in this program – get a question right and the face smiles, get it wrong and the face scowls. Basic graphics, but then it is aimed at a very young audience; possibly too young to appreciate pretty pictures.

Happy Writing is designed to teach the child how to form letters and words. The graphics and sound effects are of a much higher quality than the other two titles in the Happy series. Yellow tractors bring on lines, a magic pencil draws things and it even play several bars of Pop goes the Weasel – not exactly breathtaking stuff, but better than other Bourne products.

A dot – the magic pencil – draws a letter on the screen. The youngster must imitate the movement on paper. There is an option to add words to the list.

Play School

School Software, £9.95 tape, £14.95 disk

After the niceties of being introduced to Super Kid (the question master and tutor) and looking at a graphical cake, a six-option menu appears.

First on the list is Counting. A large box appears in which several objects are placed. The infant must add the number of items in the box and supply the numerical answer to the prompt.

Find It displays a number or letter on screen. The child must scan the keyboard and press the correct key.

The next option, Paint Box, is a simple doodling utility. Although very basic, it will keep the youngster amused for a while.

Item four is Match Up. Six odd-looking patterns are drawn on the screen; a further one is drawn away from the previous six. The child must match the seventh object with one of the other six.

Counting, drawing and associating shapes is hard work. That's why a game has been included. It is a simple Pacman variant.

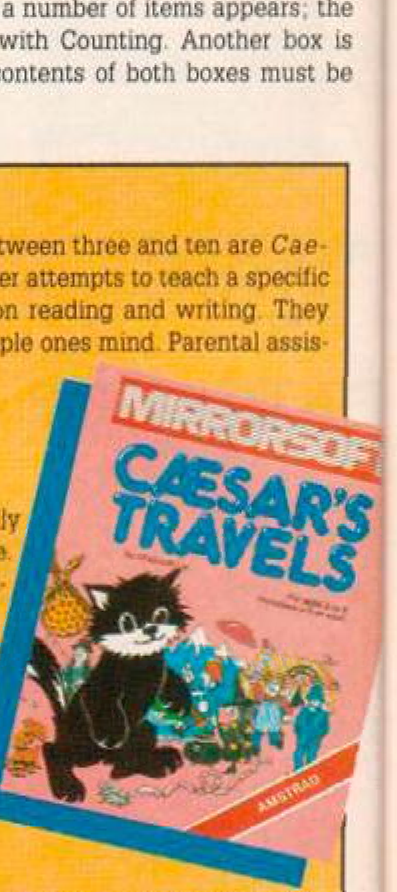
The last option is How Much. This sets a reasonable addition test for your primary-school child. A box with a number of items appears; the child must type the correct number as with Counting. Another box is drawn with further objects inside. The contents of both boxes must be added together and the total entered.

Time for a story

Two good products for children aged between three and ten are *Caesar's Travels* and the *Three Bears*. Neither attempts to teach a specific subject; although emphasis is placed on reading and writing. They can be classed as adventures – very simple ones mind. Parental assistance is helpful.

Caesar's Travels

Mirrorsoft, £8.95 tape, £13.95 disk



This gem looks and feels as professionally done as today's entertainment software. It comprises a 64 page book and computer counterpart with an abbreviated story. The computer version has the added advantage of animated action.

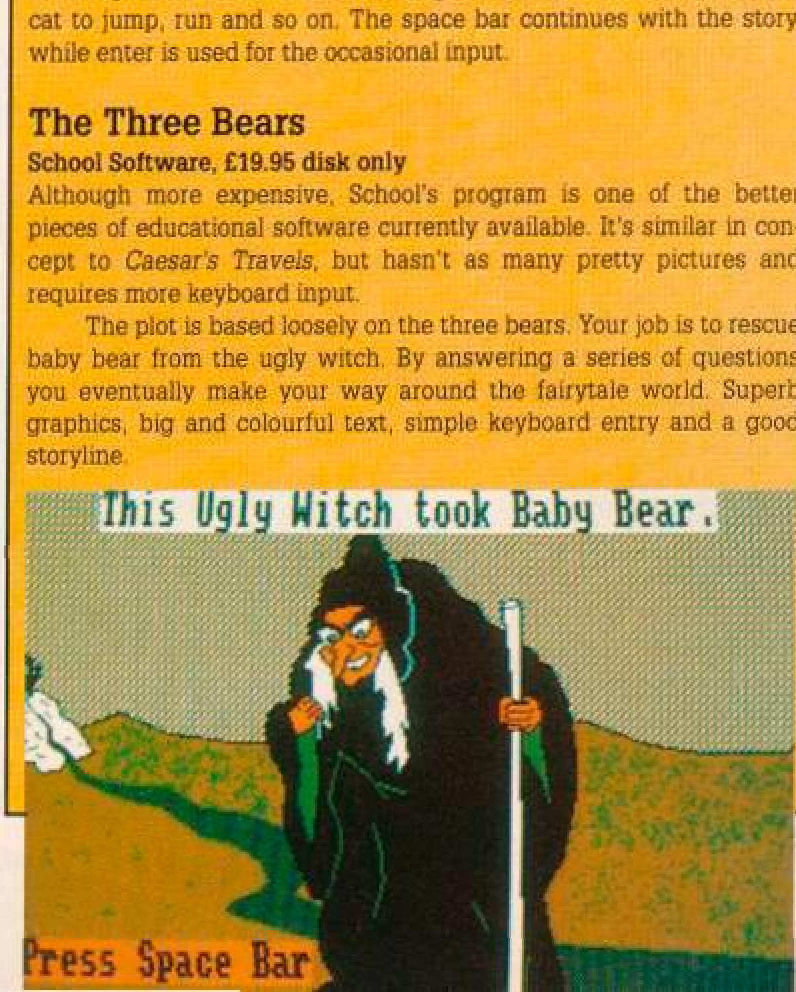
The idea is to guide Caesar the cat in his adventures. Several lines of the story appear on screen – often accompanied with animated graphics – and depending on your input, different outcomes to the story may occur. Only eight keys are involved in the action – numbers from 1 to 6, the space bar and return. Pressing one of the numbers causes the cat to jump, run and so on. The space bar continues with the story, while enter is used for the occasional input.

The Three Bears

School Software, £19.95 disk only

Although more expensive, School's program is one of the better pieces of educational software currently available. It's similar in concept to *Caesar's Travels*, but hasn't as many pretty pictures and requires more keyboard input.

The plot is based loosely on the three bears. Your job is to rescue baby bear from the ugly witch. By answering a series of questions you eventually make your way around the fairytale world. Superb graphics, big and colourful text, simple keyboard entry and a good storyline.



Superkid watches you throughout the action. His eyes occasionally blink, but for the most part he is cold and stony. He shows either sadness (when a question is answered incorrectly) in the form of turning his mouth down, or admiration (when something is answered correctly) by grinning broadly.

A well presented package with good graphics, reasonable musical ditties and plenty of options. The wealth of goodies should keep children occupied and interested.

Primary Sets

Arc Education, £8 tape, £12 disk

There are four sets in total. Each costs £8 on tape and £12 on disk. All four can be purchased for £24.50 on tape or £28 on disk. Each set has seven sections.

Set 1 includes Painting, Build a House, Find a Letter, Music Keyboard, Tracker, Match Pairs and Doodle. The titles almost explain what each section does. Painting fills a box with a colour depending on the key pressed. Build a House prompts the child to add two numbers together. If the answer is correct then a row of bricks will appear. This continues until the child has answered enough questions to form a house.



Find a Letter prints up the whole alphabet minus one character. The missing letter must be filled in by the child. This is achieved by pressing the appropriate key on the keyboard.

Music Keyboard is just that. By tapping certain keys, notes will play.

In Tracker, by feeding directions into the computer, the youngster can move a cursor round the screen. The idea is to land on another object located at a random site on the screen.

Match Pairs is similar to the classic game, memory. Two sets of letters from A to E must be paired.

The last section making up Primary Set 1 is Doodle. This consists of a single dot in the centre of the screen which, when moved with a joystick, causes a line to be drawn.

All the sets are similar. There is a wide range of tests for the youngster to tuck his teeth into, but none are outstanding. Everything is big, bold and colourful – ideal for the particular age group. The programs are written in unprotected Basic with the view that an adult can alter any part of the sets.

Language Lab

Home computers have not got the power required to output speech that would allow you to learn the pronunciation of a foreign language – you'll have to stick to Linguaphone records for that. What they should be able to do is provide everything you could get in a text book, and a bit more.



The French Mistress
The Spanish Tutor
The German Master
The Italian Tutor

Kosmos, £8.98 tape, £12.95 disk

The four programs use the same control program to run what are essentially vocabulary tests. Each language is available in Levels A and B. Both Levels together cost £16.95 on cassette and £19.95 on disk.

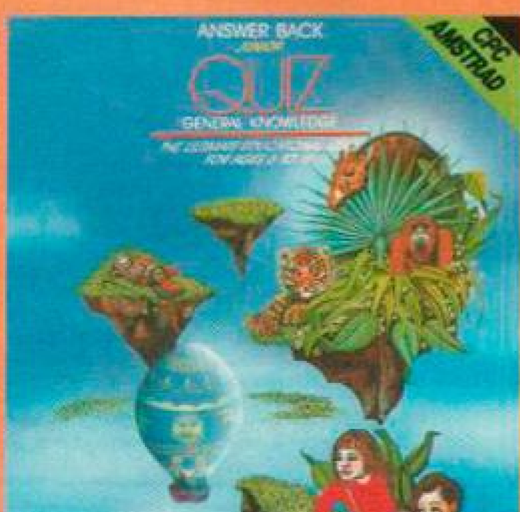
Level A provides you with 16 vocabulary areas – family, weather, clothes and so on. Each area consists of around 40 to 50 words. At the most 1000 words. All you can do with these is to test yourself, either from English to the foreign language or vice versa.

You can add entries to a particular area or even create totally new lessons to run under the control program. But why should a purchaser either want or need to do this? For the price of the program you could reasonably expect more data and more options.

Answer Back Junior Quiz

Kosmos, £9.95 tape, £13.95 disk

The Answer Back series started life on the BBC micro. *Junior Quiz* is the only one to have been translated to the Amstrad; the transition has been a good one.



Over 750 general knowledge questions come supplied with the product. Not all fit in memory at once; they are loaded in blocks of 50 or so.

Once a set of questions has been loaded, you can choose the manner in which the questions are to be asked: multiple choice, true or false, missing letters. A quaint picture appears and then the quiz commences. If you get a question right you get to bomb a dragon – entertaining to start with, but becomes repetitive.

You can add your own sets of questions, save them and try them out on other members of your family. Kosmos have additional sets of questions – called *Factfile 500* (suitable for a wide span of ages) – which can be added to the *Junior Quiz* package. The subjects to choose from include Arithmetic, Spelling, Sport and Natural History. There are approximately 15 titles to pick from. Each Factfile costs £4.95 on cassette and £8.95 on disk.

Junior Quiz is one of the best educational pieces to appear on the Amstrad. The layout and style of the package make learning fun.

Junior School

At this stage in the game children should have grasped the basics of reading and writing, and even the mechanics of setting up a computer on their own. There are a fair number of software titles for this age group; Bourne having the lion's share of them.

Junior Sets

Arc Education, £8 tape, £12 disk

Four sets exist which, if bought jointly, cost £24.50 on cassette and £28 on disk. Each set provides six tasks. For instance *Junior Set 1* consists of Weigh, Classroom, Treasure Hunt, Share, Estimate, Reactions and Animals.



Weigh displays a balance with the scales tipped to one side. The junior must decide how many weights to add to get the two sides level – simple addition.

Classroom introduces the theory of co-ordinates. Several rows and columns of desks with pupils sitting at them are printed on the screen. Each is referenced by a column letter and row number. The program either asks who is sitting at a particular location or where a pupil is sitting. Treasure Hunt is similar.

Division is tackled by the Share section. The child must supply the computer with a number. The machine represents the number as a collection of marbles on screen. Another number is then requested by the computer. Boxes totalling the value entered will appear and slowly fill up with the marbles. Eventually all the marbles will be used up or the boxes will be filled. In this way a graphical introduction to division with remainders is given.

Reactions and Animals teach the pupil to become familiar with the keyboard and the English language.

All the sets together provide a wide range of topics – from arithmetic to general knowledge. The documentation supplied is sparse, but then each section is self explanatory.

Timeman One/Two

Bourne, £9.95 tape, £14.95 disk

The two programs teach children how to tell the time. *Timeman Two* offers more than *Timeman One* in that the 24 hour digital clock is also used as a teaching aid. Both feature the face which Bourne are so fond of.

Animal, Vegetable, Mineral

Bourne, £9.95 tape, £14.95 disk

A version of the classic 20 questions. The child is requested to think of an object that is either animal, vegetable or mineral. The program will try to guess the child's input. It will ask questions about the object to help it make an educated guess. If the program fails to ascertain the object, the child can teach the computer about the item.

World-Wise

Bourne, £9.95 tape, £14.95 disk

Very similar to *Animal, Vegetable, Mineral*. The child thinks of a geographical feature. The computer then tries to guess what the child is thinking of by asking questions.

Map Rally

Bourne, £9.95 tape, £14.95 disk

Teaches co-ordinates and compass directions, improves estimating and accuracy, and helps develop the child's deductive reasoning.

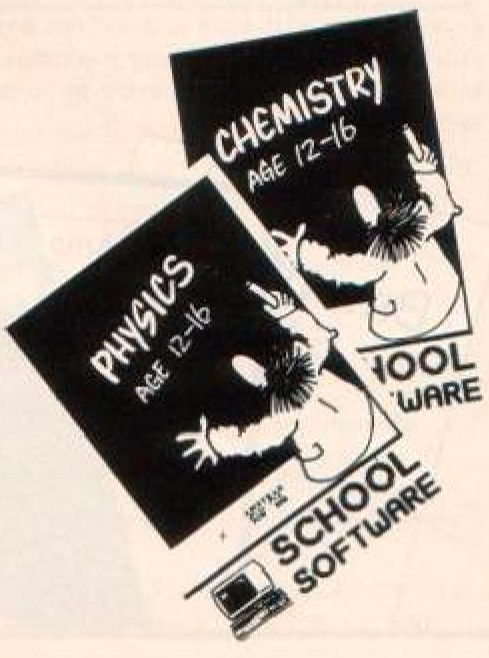
Senior School

After the profusion of programs for the 4 to 10 year-olds, there's something of a shortage for the crucial O Level, CSE and GCSE syllabi; especially now that Hill MacGibbon have ceased to publish their Pan Course Tutors.

Biology
Chemistry
Physics

School Software, £9.95 tape, £14.95 disk

Each program consists of nine parts or subjects. For instance, *Chemistry* includes sections on chemical changes, activity series and bonding. After picking a subject you are given the choice of viewing notes on the topic. The notes are very brief, but serve as useful revision aids.



There are ten questions – which require you to input the missing word – to each section; you are given two chances to answer each one. If you enter the incorrect answer, you are given a small clue (which is generally enough for you to work out the correct answer). A right answer merits 10%; 5% if you managed it on your second attempt. Once you've finished the set of questions, your overall percentage mark will be shown. Depending on the mark achieved, you will get the message very good, good or poor but will do better next time. Obviously you'll do better next time – the questions remain the same.

As educational programs go, School Software's products aren't bad. That said, there is lots of scope for improvement. More questions, a variety of question formats and detailed notes are a few suggestions.A manual wouldn't go a miss either.

Contacts

Arc Education ☎ 0472 812226
51 Coniston Crescent, Humberston, S Humberside, DN36 4BA

Bourne Education ☎ 0794 523301
Bourne House, The Hundred, Romsey, Hampshire, SO5 8BY

Fernleaf Education ☎ 0474 359037
31 Old Road West, Gravesend, Kent, DA11 0LK

Kosmos ☎ 05255 3942
1 Pilgrims Close, Harlington, Dunstable, Beds, LU5 6LX

LCL ☎ 0491 579345
13 Deanfield Road, Henley, RG9 1UG

School Software ☎ 010353 6145399
Tait Business Centre, Dominic St, Limerick, Ireland

Chemistry Revision
Physics Revision

Bourne, £14.95 tape, £19.95 disk

Bourne have produced a couple of crackers. Although a little on the expensive side, they are packed with outstanding revision questions and examples.

Each cassette or disk contains several programs to help you with revision. The first program tests your existing knowledge, the others concentrate on specific areas.

The questions are either multiple choice or multiple completion – gaps are left in the text which you must fill. There are a lot of questions on each subject; many are brightened up by the inclusion of illustrative graphics and sound effects – almost makes revision enjoyable.

A section is included for you to keep revision notes. Notes on up to 30 different topics can be held in the computer's memory. Entries are stored in alphabetical order.

It makes a change to find a couple of educational programs that are genuinely useful. They look good, perform well and make learning a pleasure.

End of term report

It's unlikely that the current crop of educational software will transform lives. With the exception of a few noteworthy titles, the majority of software just scrapes the average mark. Some of it will help children with maths or endow them with the minimum vocabulary for learning a foreign language. There are even a few that will be of use to the O Level.

There's not that much of it about either. Three or four software companies churn out the bulk of it. More competition would mean a wider range and higher standards.

True, we haven't reviewed every piece of educational software. LCL have an interesting range of product, but sadly, despite several requests, none of it turned up in time for the article. The same is true for Fearnleaf Education. If we receive their programs we'll cover them in a later issue. From what we have seen, educational software still has a long way to go before the textbook is made redundant.

WORDS WORK

How to get the most from your word-processor and printer

This month we continue our look at laying out a document on several of the top word-processors. Block and indent styles are the issues raised. How to use them to best effect and which is best for your application.

Deciding on the layout of your letter or document can be confusing. What do you use? Block or indent? Do you punctuate text or leave it free standing? Today block paragraphs with no punctuation are the in thing. The main reason is speed. It is far quicker and easier to hit the return key twice at the end of a paragraph, rather than hit the return key once and press the space bar five times (you may have your tab key set, but ergonomics will show it takes longer). This makes sense today where time means money.

So what exactly does the block style entail? Look at the dummy document below; the sender's address is on the right, the receiver's address on the left and the date on the left. This is one way of starting the letter. Many companies have their trademark and address on the left or even across the top of the paper. In these cases you must juggle the positions of your address and the date until you're satisfied with the appearance. There's nothing wrong with being individual, but stick to a sensible style.

When we say no punctuation, we don't mean removing the full-stops, commas, brackets and dashes from the body text. Punctuation is removed only from the addresses, after the Dear Fred and the Yours sincerely (faithfully, grovellingly etc).

Indent paragraphs

Like the block style, the indent format requires the sender's address on the right and the receiver's address on the left. Strictly speaking the date should be on the right.

Each paragraph starts five spaces to the right of the left margin. The sign-off message (yours sincerely or yours faithfully) should be centered at the bottom of the letter.

Block style is old fashioned. There's nothing wrong with it – in fact many legal documents are put together in this fashion – but somehow letters lose their appeal. Block is best kept for books, newspapers and magazines.

You've chosen the letter style that you feel would best represent your company or image; where do you go from there? For a start, you haven't fully decided the layout of your document. You've still got to decide whether you want to use justified or unjustified text. Again, house style may dictate that you must use one of the two – even a mixture. However, unless your word-processor can send micro-spaced text to the page, use unjustified text. There is nothing worse than seeing different length spacing between words on a page. It looks ugly and very unprofessional. Sadly this is a curse of many word-processors for the Amstrad. One product that gives the option of micro-

Mr Frank N. Stein
Temples of Rest Ltd
Gravesend
Kent

Dear Mr Stein,

As a frequent organizer of conferences and meetings, you will be interested to hear about the Hades Hotel which has recently been extended to include a seminar suite.

We know that finding exactly the right facilities at the right price can present problems and believe we may now be able to help you solve them.

Situated only a few minutes' drive from Gravesend, the Hades Hotel can now offer a wide variety of meeting rooms to suit all requirements. The facilities are described in detail in the enclosed brochure. But why not come and see them for yourself?

My secretary will telephone you to arrange a convenient time. All our staff look forward to giving you a warm welcome.

I look forward to meeting you.

Yours sincerely,

Hilary James
Banqueting Manager

Style setters

Rather than altering the justification style and having to type in your address every time you wish to write a letter, it is far easier to set these once and store them in a dummy file or alter the defaults.

Protext – there isn't a method of forcing the justification to default to the required setting. We have managed to discover a way of doing this with the rom version; not particularly elegant, but it works. If you come up with a similar technique for disk and tape versions, let us know.

```
1Ø FOR t=&BE8Ø TO &BE8Ø+14:READ a$:POKE t,VAL("&"+a$)
2Ø NEXT:POKE &BE8B,&EC:CALL &BE8Ø
3Ø DATA 21,8D,BE,CD,D4,BC,21,29,ØØ,19,36,EC,C9,DØ,ØØ,ØØ
```

The poke in line 20 should read **POKE &BE8B,&EC** for unjustified text and **POKE &BE8B,&DC** for right-justified text.

Tasword – there is an excellent option for saving the whole word-processor: defaults and all. For instance, to alter the justification mode press control and F. Then press control and enter to get to the main menu. Option T will save *Tasword* in its current state.

You can define one of the function keys to hold your address. In this case we have used function key 0. Simply pressing the key will print your address on the right hand side. To alter the exact positioning of the address, alter the value following **SPACE$**, line 20. Add this line to your *Tasword* loader.

```
2Ø KEY Ø,CHR$(13)+SPACE$(4Ø)+CHR$(1)+"Future Publishing Ltd"
    +CHR$(13)+"4 Queen Street"+CHR$(13)+"Bath"+CHR$(13)
```

BrunWord – from the main menu you can select M, memory save. This will move the whole work area to the file area of memory. When you go to save a file, the left margin, right margin, number of lines per page, printer control codes and so on will also be saved. The best idea is to set the defaults and create a file with only your address at the top right of the document. Simply load this when you wish to write a letter.

Pyraword – the system allows you to save and load option files. These files contain function key settings, tabs and margins, pen and paper ink values. When you run *Pyraword*, the option file **WPSVOPTS.USR** is searched for. If it is present its values will be installed into the system.

The keystroke-memories (just a glorified name for the function keys) can be used to store your address. So once you've set these to your satisfaction – along with margin settings and justification – you can save the lot. Enter command mode, by pressing control Z, and press S for save user options.



Ways with Words

Do you have favourite tricks for getting the best out of your word-processor? Or do you have seemingly insurmountable problems? Share them with other Amstrad addicts. Send them in to: **Words Work, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ.**

Don't cut

Stop! Stop! Before rushing off to get a razor to cut the number 14 wire (see issue 31 – Printing from *Mini Office II*) on your printer cable, read this. If you have problems with double spacing from the 6128 with printers, just type and save the following program. Use it to boot the printer before you start running any program; printing will come out single line.

```
1Ø PRINT#8,CHR$(27);"1"
```

Wendy Wallis, Helston

Tasword revisited



I am a writer using *Tasword 6128* and a Star SG-1Ø printer. I have redefined many of the printer control characters to suit my own output. Here are some ideas.

Soft underline – the underline facility supplied includes a space code. This means that the printer control character takes up one space on the printed-out copy. This is fine for most work, but when used at the beginning of a line or between a word and a punctuation mark it results in an unwanted space. To avoid this, define one of the other printer control characters omitting the 32 from the code.

Double/single space – for changing the line spacing within a document without having to remember to double space on the screen.

Uni-directional printing – for a neater left-hand edge to the printed text.

In addition I have set codes to switch-in International character sets. This gives me access to accented characters which – not of importance all the time – are occasionally needed.

I have also discovered a way of producing emphasized and double-strike NLQ. Since the effects are achieved by printing two identical lines of text, one on top of the other, each line must be typed twice or copied using the block copying facility.

John Boon, Leighton Buzzard

Down in the dumps

I own an Amstrad CPC 464 and Brother M-11Ø9 Printer. Using *Tasword* I have managed to write reports, letters, et al. However, I do not seem able to set the printer to produce near-letter quality printing from within *Tasword*.

I have written programs in Basic using print commands where 27 78 1 sets NLQ, and according to *Tasword* I should be able to set up that print control code within the program. No luck. Can anyone help?

Mrs Mary Robinson, Pinner

From Tasword's editing mode press control and enter simultaneously. Press C (for customize Tasword) followed by enter. Answer N, N and Y. Press N, 27, enter, 78, enter, 1, enter. Then n, 27, enter, 78, enter, Ø and enter. Finally hit N, N, N, R, enter. Hopefully you'll be back in Tasword's edit mode.

To print characters using your printer's NLQ font simply hit control and space together followed by N. When you wish to revert to the standard font press control and space followed by n.

Italics where art thou

I recently purchased a DMP 316Ø printer which I use on my CPC 464. I can get all the different typeface styles except italics. I have done everything that it says in the manual – using the command `PRINT #8,chr$(27)+"4"` – but it still prints up in the normal typeface.

Can you please advise me what I am doing wrong? Is it the fault of the printer?

Alan Hampson, Merseyside

Check your dip switches, Alan. You'll probably find that the printer is configured to print near-letter quality. Italics won't work in this mode. It's the design of the printer; several other makes also suffer from this problem. To obtain an italic character set ensure dip switch DS1-8 is off. If you want an NLQ italic font, get Qualitas Plus (reviewed in this issue).

Disk files

I recently bought *Protext* on tape from a computer club. The problem is that since then I have acquired a 6128. Is there a routine which will allow me to save and load text to and from the disk, instead of always having to use the tape. I know Arnor will upgrade *Protext*, but it costs £14 for the privilege.

Robert Leitch, Gallowhill

Unfortunately we haven't got a version of the tape-based Protext in the office, so we can't guarantee this will work. When you're in command mode type DISC followed by return. Loading and Saving should be redirected to the disk drive. To revert back to cassette enter TAPE. Certainly from the disk and rom versions it is possible to toggle between the two formats.

Substitute for Qualitas

I have a 6128 and DMP 1 printer. Is there any software similar to the *Qualitas Plus* print enhancer, which I understand is only suitable for use with Epson compatible printer, that I can purchase that will upgrade my DMP 1?

Ray Dutton, Wolverhampton

When you say upgrade your printer, do you mean enhance the printer's output or turn the existing printer into something more exciting? Both are possible. Tasprint from Tasman (Ø532 4383Ø1) can get your DMP1 producing reasonable quality print. And Ink-Jet Update provide an astonishing service whereby they can convert your DMP1 into an ink-jet printer. This costs around £6Ø, but you get a high-spec machine capable of NLQ, underline, italics and graphics. More from IJU on Ø252 51Ø933.

Mini Office II into Protext

Recently I purchased *Protext* on rom and am now faced with the problem of loading *Mini Office II* files into *Protext*. When I try to load a *Mini Office II* file into *Protext*, it throws a wobbly. Could you advise me on how I should go about the process?

S Booth, Gateshead

Before you save a Mini Office II document you are given the option of saving it as a Mini Office II file or as a standard Ascii file. Pick standard Ascii file. Protext will recognise the format and will be able to load the file. However, it may be necessary to re-justify the text.

The reverse is also possible. Mini Office II will accept a Protext file as long as the file has been saved from program mode (entered by typing PROG from command mode).



Absolute Beginners

The fifth in a series of articles taking you from complete ignorance to COMPLETE mastery of Basic

Last month, you typed in a program. It was a very simple program, and didn't do anything a compound command couldn't do. Here's another program for you, and this one's even simpler:

```
10 CLS:PRINT"Amstrad Action"
```

This doesn't do anything for the time being – program instructions aren't carried out until you type **RUN**. If you read the first instalment of Absolute Beginners, you won't actually need to run the program to work out what it does. The **CLS** clears the screen and the **PRINT** command writes the message "Amstrad Action" on the top line. You can take another look at the program by typing **LIST**.

Once you've typed this in, and **RUN** it to check that it does work properly, you'll probably want to expand it a bit – after all, it's not very exciting as it is. Try typing:

```
20 PRINT "from Future Publishing"
```

Again you'll see nothing happens. Now type **RUN**. Syntax errors permitting, you'll see the screen clear and the message

```
Amstrad Action
from Future Publishing
```

appear at the top of the screen. Type **LIST** and you'll get a look at this new, improved program. It should read

```
10 CLS:PRINT "Amstrad Action"
20 PRINT "From Future Publishing"
```

In other words, the program consists of both the pieces of text you've typed in. These pieces of text are called program lines, and the numbers at the beginning are their line numbers. We saw last time that the line number tells the machine "This is a program line – don't obey it until you are told to". What we didn't cover was what any particular number at the start of a line means.

The right order

As far as the computer's concerned, any instruction starting with a number is a program line. When a program line is typed in, instead of obeying the instructions in the line, it just adds them to the other program lines you've typed in so far. The question is where does the machine store the new line in the list of lines you already have? This is where the line number comes in.

If you've typed in the example lines, and LISTed the program they formed, you'll notice a glaring omission. We've missed out a vital piece of the Amstrad Action message. To fix this, type:

```
15 PRINT "The mould breaking magazine"
```

and **LIST** the result. You'll see that the new line has been fitted in between the other two, like this:

```
10 CLS:PRINT "Amstrad Action"
15 PRINT "The mould Breaking magazine"
20 PRINT "from Future Publishing"
```

First Bytes

So, hexadecimal horrifies you? We have the solution in this section devoted to the novice machine code programmer.

By now you should know the difference between binary, decimal and hexadecimal numbers. You should also be relatively confident of converting from one base to another – if you're not, you can always resort to Basic's in-built commands. So, it's time to dive into the depths of assembly language programming.

The computer or, more specifically, the Z80 processor at the heart of your machine requires instructions to tell it what to do. If it receives no instructions it lies dormant. These instructions come in the form of numbers (8-bit numbers). The numbers tell the chip to perform an operation on an area of memory, on a register or even on a number itself. But what's a register? Registers can be likened to filing cabinets or pigeon holes – they can store things. In this case they store numbers.

A collection of registers exist in the Z80 chip (see the diagram). The commonest – and the ones of most interest to us – are called A, F, B, C, D, E, H, L. These will be met most often in assembly language. All can hold an 8-bit number up to 255 in value.

The processor can manipulate the numbers held in the registers. For instance, numbers can be added or subtracted, ANDed, ORed and so on. Of course, programs can be written using assembly language to simulate any mathematical formula. But, obviously, maths functions the chip can perform on registers will occur many times faster than those churned out by programs.

The accumulator

Several registers can pair together to form single 16-bit registers. Like two pigeon holes becoming one large pigeon hole. Not any register can tag to any other register. Of the common registers, only B and C, D and E, and H and L can couple together. These become known as BC, DE and HL respectively. Often they are referred to as the address registers.

The F register, known as the flag register, cannot be written to directly. It simply monitors the state of the other registers and sets or resets a bit (flag) depending on the conditions.

Most important of all is the A register or accumulator. This cell has exceptional properties: data transfers between memory and accumulator take place faster than with any other register.

Assemblers

Assembly language is designed to make it easier for humans to communicate or send instructions to the microprocessor. As the processor only understands numbers, an assembler is used to translate near-English commands into numbers – machine code. An assembler has an editor (a cut down word-processor if you like) which accepts assembly language commands. Once the file (or source code) has been assembled, pure machine code data (object data) is formed.

Specialized registers

Along with the standard registers are several that have specific tasks. The 16-bit program counter (PC) tells the processor where the next instruction to be executed is located in memory. It can be likened to a tape counter.

The stack pointer (SP) is another specialized register. It points to an area of memory known as the stack. The stack is generally used as a temporary store for 16-bit numbers. It is of the form last-in, first-out. The first element introduced into the stack is always at the bottom of the stack. The element most recently deposited is at the top. The analogy can be drawn to a stack of plates on a restaurant counter.

The I register, which holds the interrupt vector, is best left alone at present. Similarly the R or refresh register is unusable for most purposes.

Indexing is a memory-addressing facility not always found in micro

This happens because the computer always deals with lines in numerical order, regardless of the order you type them in. For another demonstration of this, try typing **RUN**. You'll get the message:

```
Amstrad Action
The mould-breaking magazine
from Future Publishing
```

There are a couple of points to note here. Firstly, the order in which you type the lines is of no importance whatsoever – once you've typed them in, the computer **LISTs** and **RUNs** the lines according to the line numbers.

Secondly, the actual number of a line has no meaning on its own. We only gave the new line the number 15 so that the computer would store it between lines 1Ø and 2Ø – if it had been called line 17 it would have worked just as well. Indeed, we could have called the first line we entered line 146, and the second line we typed line 673 – this would produce exactly the same results, provided that we gave the most recent line some number between the two. It's the order of the line numbers that matters, not the numbers themselves.

That's enough on programs for a while. We'll have a summary at the end of the article, but first here are the graphics promised before.

Plotting

Last month's bit on inks and colours was the tough half of graphics. This month things should be a whole lot easier. Type in this program:

```
1Ø CLS
2Ø PLOT 15Ø,1ØØ,1
```

RUN it. The screen should clear and a tiny dot appear near the bottom left-hand corner of the screen. Not very impressive, perhaps, but that's what **PLOT** does – it plots a point on the screen.

As you can see, there are three numbers after the command. Avid AB readers will recognise these as operands – those crucial pieces of extra information that tell the computer how to perform the commands you give it. While **PLOT** tells the machine that you want to plot a point, the operands tell it where and what colour you want it.

The first two operands carry the where information. They are the co-ordinates of the point. Don't be put off by the sound of the word – co-ordinates are very simple things. Just remember, we're trying to tell your Amstrad the position of a place by saying how far east or west it is of some fixed point, and how far north or south.

If we take Bath as the fixed point, we can describe the position of Edinburgh as some number of miles north of here and some other number of miles east. Provided we know where we are measuring from and what units we are measuring in, these two numbers tell you where Edinburgh is. Those two numbers are the co-ordinates of Edinburgh.

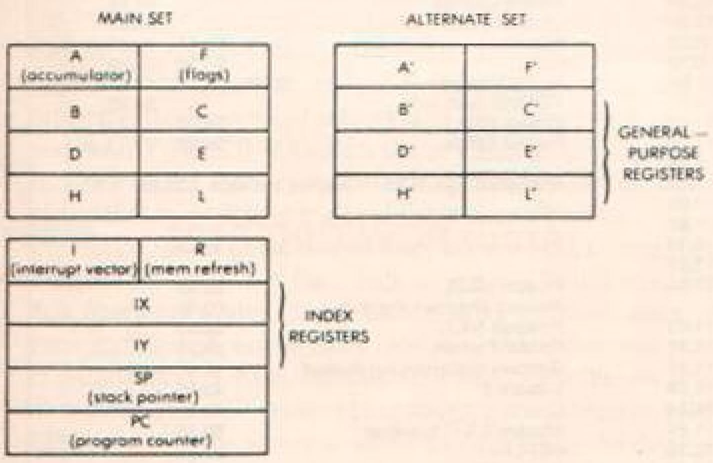
Screen co-ordinates are just the same. The fixed point is the bottom left-hand corner of the screen, so the co-ordinates measure how far to the right of this corner will plot and how far above it. Thus **PLOT 15Ø,1ØØ** will plot a point 15Ø units in from the left-hand edge and 1ØØ units up from the bottom of the screen. The units don't actually have a name like inches or meters, so we'll just keep calling them units. But unfortunately that is all we have room for this month. Tune in next issue for further enlightenment on graphics programming.

Summary

Compound commands are used to give the machine several instructions in one go. They are made by joining commands with colons.

A **Program** is a sequence of commands – separated by colons – that starts with a line number. The computer doesn't obey the commands until RUN is entered.

PLOT moves the pen to a specified location and plots a point there. It takes three operands: the first two are the co-ordinates, the third is the colour the point is to be drawn with.



processors. The Z80 provides such a service via its 16-bit IX and IY registers. An index register will typically contain a displacement which will be automatically added to a base value. These registers can also be used as the standard BC, DE or HL pairs.

The alternate set provides another eight registers. These are identical to the standard eight. Unfortunately it isn't possible to use this set under normal circumstances – at least not as far as the Amstrad is concerned. The reason is that the CPC's firmware uses the alternate set to store vital system information. Altering the data contained in these registers could prove disastrous.

Memory lane

The Amstrad computer has 64k of memory. One k is equivalent to 1024 bytes (or 1024 storage spaces). This means there are 65535 bytes in total. Memory locations start at 0 and work up to 65535 (FFFF in hex). Each location has room for an 8-bit number, that is, any value between 0 and 255. It is in these memory locations that programs are stored – Basic and machine code. Get used to dealing with memory, it's going to pop up frequently in future.

Hackers Only

The box that caters for more advanced programmers.

How did you get on with writing a routine for multiplying signed numbers together? Following is the source code to do the job. To use the routine, simply store the two values you wish to multiply together in the locations **number** and **number2**.

Entry conditions: none. Exit conditions: DE holds result. If error or overflow occurred then A holds &FF. AF, BC, DE, HL corrupt. Length:86 bytes. Code Type: relocatable.

```
   LD C,0
   LD HL,(NUMBER)
   BIT 7,H
   JR Z,DOWN
   INC C
   EX DE,HL
   LD HL,0
   AND A
   SBC HL,DE
   LD (NUMBER),HL
DOWN
   LD HL,(NUMBER2)
   BIT 7,H
   JR Z,START
   DEC C
   EX DE,HL
   LD HL,0
   AND A
   SBC HL,DE
START
   LD B,16
SHIFT
   SLA E
   RL D
   BIT 7,D
   JR NZ,ERROR
   ADD HL,HL
   JR NC,HERE
   LD A,(NUMBER)
   ADD A,E
   LD E,A
   LD A,(NUMBER+1)
   ADC A,D
   LD D,A
   BIT 7,D
   JR NZ,ERROR
HERE
   DJNZ SHIFT
   LD A,C
   AND A
   LD HL,0
   SBC HL,DE
   EX DE,HL
MORE
   SUB A
EXIT
   RET
ERROR
   LD A,&FF
   RET
NUMBER
   DW 0
NUMBER2
   DW 0
```

ARNOR – Software für Kenner

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Box Clever

Does Richard Monteiro suffer from double vision? Or are there really two peripherals that look identical and do similar jobs?

At first glance Romantic Robot's *Multiface II* and Siren's *Hackit* look identical (bar the stickers plastered to their outer shell). Both can stop commercial programs at any point and both have reset buttons, but that's where the similarity ends. The *Multiface II* is badged as a tape-to-disk utility, while *Hackit* is pushed as a hacking device. However, the two add-ons encroach slightly on one anothers ground. This is not a spot-the-difference puzzle, but an article pointing out the pro's and con's of the two hardware gadgets.

Hackit

Siren Software, £29.99

Hackit – its name gives the game away – is a hacker's tool. By flicking a switch and pushing a button it is possible to halt any program and then inspect or modify the computer's memory.

The only distinguishing features of the plug-in are a button and a switch. The button resets the computer and, if the switch is flicked to the correct position, passes control to *Hackit*. The reset will initialise the firmware, the screen and colours, and any memory not between &40 (64) and &A67F (42623). Although many commercial programs stick to the confines of the memory locations that aren't reset by *Hackit*, there are plenty that store data in the perishable memory zones.

Once *Hackit* gains control there are a wealth of commands to choose from (all are entered in plain English just like Basic). **DISC** will enable the disk operating system if you have a drive attached, **EDIT** allows you to view and change any memory location – characters may only be entered in hexadecimal or Ascii, but there are commands that let you convert hex to decimal and vice versa. **DISASSEMBLE** either displays areas of data as Z80 opcodes to the screen or saves an Ascii file of the disassembled file – which is an easy way for the unscrupulous to rip off other peoples code. **SEARCH** can hunt for hidden messages or a string of hex numbers, helpful for finding infinite lives pokes perhaps.

Other commands exist that enable you to catalogue a disk or tape, access other roms, change pen and paper colours, call a machine code routine and send data to the printer. An interesting command is **MEMORY**; this displays all of memory as a graph. Patchy areas usually contain data and virtually solid areas mostly contain coding. By issuing this command you will know which areas to search.



Hackit's main attraction is being able to halt a program and inspect any part of memory. If you know what you're doing it might be possible to transfer some programs from tape to disk, but it's certainly no easy task. Once a program has been stopped you will only be able to restart it if you know the program's execution address. That said, if you are reasonably competent at assembler and know your way around the Amstrad, *Hackit* is powerful and very easy to use.

GOOD NEWS	BAD NEWS
■ Programs can be stopped and modified. ■ Good editing and disassembling features. ■ Handy hacking tool.	■ Not all memory remains intact. ■ Complex for the beginner.

Multiface II

Romantic Robot, £39.88



Romantic's black box has been going strong for well over a year. It is the best answer (hardware or software) to the perennial how-do-I-get-this-program-onto-disk question. The latest *Multiface* has two push-buttons and a switch. One button resets the computer, the other puts the *Multiface* in control (assuming the switch is in the correct position). Software houses have discovered how to check for the peripheral. The switch makes the *Multiface* invisible.

The *Multiface* is the only device that can successfully stop a program at any point and, later, resume play as though nothing had happened. Tape based programs can be transferred to disk extremely easily. The only thinking involved is deciding what to call the file.

Whenever a program is running in memory and you press the *Multiface's* red button, control is handed over to the black box. A menu appears allowing you to **RETURN** to the program, **SAVE** either the whole program or just the screen to cassette or disk, edit memory, plus a number of other options.

A *Multifaced* file contains all the characteristics of the program in memory; screen size, colours, sound, code. If you have a 6128 the black box will save the contents of the second bank along with the first. Files are compacted which makes reloading much faster. When a file is loaded back, it executes from the point at which you saved it. To reload *Multifaced* files, you must have the device present – prevents piracy.

Apart from its obvious tape-to-disk transfer capabilities, the *Multiface* can be used to view and alter memory. The Z80 registers, video controller and colour palette can similarly be modified. Either hexadecimal or decimal entry is acceptable. Editing is possible, but it is slow and tedious. Romantic Robot are working on an assembler and disassembler package that will work with the *Multiface*, but that's still months away.

For putting cassette games on disk the *Multiface* is unbeatable. It's editing features are clumsy, but then they are not its major selling points.

GOOD NEWS	BAD NEWS
■ Tape to disk transfer works a treat. ■ Programs can be stopped and started at will. ■ Memory editing possible.	■ Editing slow and cumbersome. ■ No disassembly option.

Romantic Robot ☎ 01 2008870
15 Hayland Close, London, NW9 0LH

Siren Software ☎ 061 2281831
2-4 Oxford Road, Manchester, M1 5QE

Basic Word-Processing:6

The final part of the series by Bill Simister on how to create and use a word-processor entirely in Basic.




```
10 REM
20 REM BASIC WORD-PROCESSING
30 REM
60 KEY 129,"PRINT #S,":KEY 138,"CLS:LIST 1000-"+CHR$(13):KEY 128,"
RUN"+CHR$(13):KEY DEF 10,0,162:KEY 131,"WORDUSE1"
70 INK 0,23:INK 1,0:BORDER 23
80 MODE 2:WINDOW 7,72,1,25
90 S=0:A=1:REM PRINT #S,CHR$(27);"U";CHR$(1):PRINT #S,CHR$(27);"1"
;CHR$(6):PRINT #S,CHR$(27);"A";CHR$(24):PRINT #S,CHR$(27);"p";CHR$
(1):REM paging to 5 (incl)
100 REM PRINT #S,CHR$(27);"C";CHR$(33):PRINT #S,CHR$(27);"N";CHR$(
7):REM Skip perforations routine to make pages.
110 REM PRINT #S,CHR$(27);"j";CHR$(255):PRINT #S,CHR$(27);"j";CHR$
(255):WIDTH 66:GOTO 400:REM Routine to position the first number c
orrectly.
120 TROFF
130 WIDTH 66:GOTO 1000
400 REM routine to print page numbers
410 FOR q=1 TO 30
420 PRINT #S,SPC(28);A:A=A+1
430 PRINT #S,STRING$(31,CHR$(10))
440 NEXT
450 STOP
900 REM To start set leading edge of paper 1/8th. inch beyond the
    ribbon edge.
1000 PRINT #S,SPC(17);"BASIC WORD-PROCESSING":PRINT #S,SPC(21);"by
 W. Simister":PRINT #S,SPC(24);"Part One":PRINT #S
1010 PRINT #S,"    The trouble with  'word-processors'  is that th
ey are written by programmers who think in a complex manner.  They
  are difficult for a writer to understand:  he is impatient to get
  on  with  his"
1020 PRINT #S,"'piece', and cannot spare enough of his mind to dea
l with the      intricate and ambiguous instructions that often acc
ompany word    processors."
```

In the previous parts of this series describing how to use my Basic Word Control program we have progressed to the actual use of the program. The use of the Copy Cursor Method of EDITing was described, and some text was given on which to practice. We shall enlarge on that now.

Presuming that you have practised well the method of starting each text line – at the space after and below the apostrophe after **PRINT #S** – the next item is the amount of space available for your text while writing long chapters of a book. All that follows is based on the CPC 464, but it can easily be interpreted for use on other machines. I am told that the 464 has more user ram with Basic than the 6128, (43K against 41K), so users of the 6128 should check with their equivalent of FRE.

Free memory

On the 464 if you use this: **PRINT FRE ("")** directly into the computer, when just the program lines 10-1000 are in the computer, you will get a reading of just above 41,000 characters still free – that is 41K in computer language.

Unfortunately the computer needs about 6K of this for its own use as you type, so you can reckon on using about 35K for your text. To make this simpler to understand: reckon on using up to about program line 2700, spaced apart by 10, for text of three lines each. That's about 270 program lines of text, which will take up, with the program itself, about 30K. When you have used that much memory the FRE reading will be about 100, and you will have a chapter of about 20 pages – 25 lines of text to each page. That amounts to about 6000 words.

There is a little latitude on this – I have gone up to 35K of text in a chapter – but it is advisable to keep the number of pages in each chapter down to 20 or so – editors seem to prefer that.

So, if you go above line 2700 or thereabouts, use the FRE command – directly into the computer – to make sure you do not have it sink to lower than 600. When SAVEd the CAT reading from disk will be about 34K; it varies from one chapter to another, according to how full is each three line program line. If the FRE reading goes below 600 or so you will get a MEMORY FULL notice.

Disk vs cassette

That was all calculated using disk, because the CAT command on disk gives the K reading as well. On a cassette the same program took 15 blocks to enter, reaching a reading of 150 on the clock. It took 6.5 minutes to SAVE, against three or four seconds when using disk, pointing once again to the vast difference between cassette and disk.

When using cassettes allow 15 blocks, or 16 at the most, for a chapter length, otherwise the chapter will have to be split in two. A C20 cassette has a reading of about 260 when full, so it is advisable to allow one full side of such cassettes for each chapter, unless you use larger cassettes. An 80,000 word book would need ten C20 cassettes. A similar book would go on five sides of the 3 inch disks.

Frequent saving

There is a big advantage with disks when working too. The safest course, having regard to the possibilities of electricity failure, is to SAVE what you have typed every ten minutes or so.

Some leave it for half an hour or more, but in half an hour you could have typed in something that had taken a lot of thought, and a failure of current would lose it. When near the end of a chapter the SAVE time on disk is negligible, but on a cassette it is about 6 minutes, to mention nothing of the fact that saving on a cassette is not so reliable as on disk.

Line 900 in the program is a REM one to remind you of the paper position before printing. It means that just one eighth of an inch of the paper should be showing beyond the printer ribbon. That is for printing the text. The numerous print commands of **PRINT #S**, make the first line print about six lines down, and from then on the commands determine what happens.

When printing the numbers, however – onto the re-threaded paper after printing the text; a procedure with the REM re-inserted into line 100, and removed from line 110 – the edge of the paper should be JUST concealed by the ribbon edge.

Disk capacity

A point about the use of disks when storing long programs: four or five chapters can be put on the same side of a disk, but after that some difficulty may be encountered, even though the CAT reading may indicate there is room. The disk can take 169K on a side, so it may seem that five chapters of 30K each would go on one side of a disk easily – 150K.

They would not, however, for when you are working on a program, and keep SAVEing it, the disk carries two examples all the time: the original BAS, and the BAK copy. So that with four chapters of 30K each on it, a disk would need a memory of five times 30K, 150K. Getting rid of the BAK version of one would appear to leave 120K; apparently room for a fifth chapter. This is not so, however, for while the disk is SAVEing anything, that piece is carried in its memory, so needs an extra 30K, or whatever length the new piece is, to handle that.

There is an easy way to remember this: whatever the length of the piece you wish to save, see that there is double that length available on the disk first. A 30K piece would need the CAT reading to be no more than 109K, and preferably more than that, for sometimes a program is perilously close to being just at the limit of its K reading – just about to move over to 1K more.

This series of six articles has been slanted mainly towards writers, but there are other ways in which this program can be used. One I have been working on is for storing and displaying the enormous amount of material gathered when doing family history research. I am sure you will think of many other uses.

Hard Copy Helpers

Richard Monteiro looks at an inexpensive, new colour printer, an 8-bit printer port and the latest print enhancement package.

Star LC-10

Star Micronics, £263 rrp, £298 with colour option

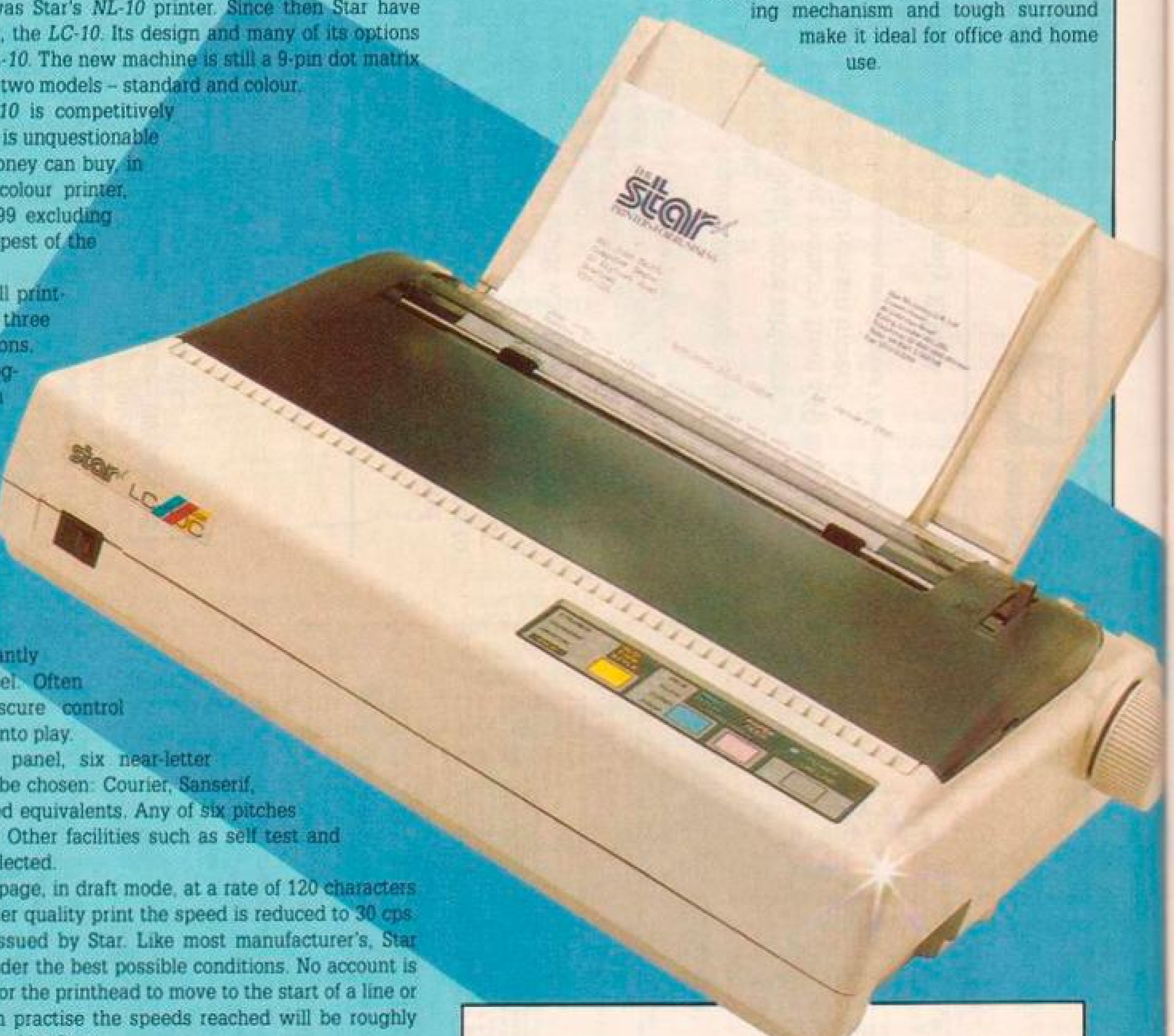
Several issues back we had a look at a number of 9-pin printers. One of the models reviewed was Star's *NL-10* printer. Since then Star have released another printer, the *LC-10*. Its design and many of its options are based arounf the *NL-10*. The new machine is still a 9-pin dot matrix affair, but is available in two models – standard and colour.

The standard *LC-10* is competitively priced, the colour model is unquestionable value – the cheapest money can buy, in fact. Citizen's *HQP-40* colour printer, which weighs in at £499 excluding VAT, is the second cheapest of the genre.

Not so long ago, all printers sported the same three external control buttons. The on- and off-line toggle, the line feed button and the form feed button. In keeping with other printer manufacturers, Star now place a swish control panel on all their printers. A number of typefaces and pitches are instantly available from the panel. Often dip switches and obscure control codes need never come into play.

From the *LC-10*'s panel, six near-letter quality (NLQ) fonts can be chosen: Courier, Sanserif, Orator and their italicized equivalents. Any of six pitches can similarly be picked. Other facilities such as self test and hex dump can also be selected.

Text is sent to the page, in draft mode, at a rate of 120 characters per second. For near-letter quality print the speed is reduced to 30 cps. Those are the figures issued by Star. Like most manufacturer's, Star measure their results under the best possible conditions. No account is taken of the time taken for the printhead to move to the start of a line or for the paper to feed. In practise the speeds reached will be roughly 20% less than those quoted by Star.

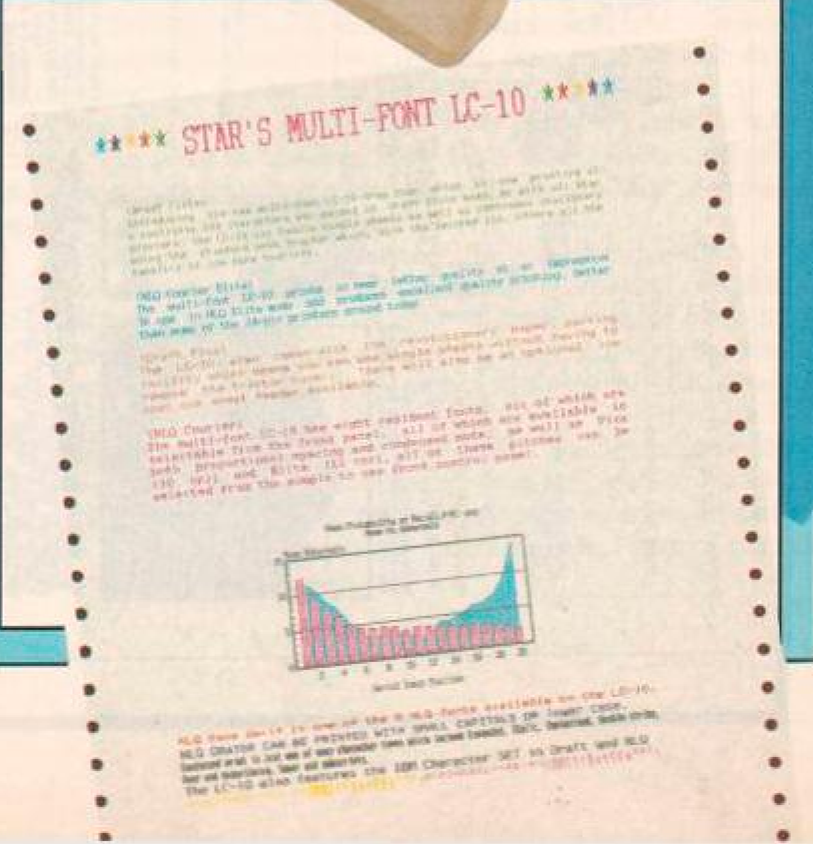


GOOD NEWS	BAD NEWS
■ Lots of NLQ fonts. ■ Reasonably priced – especially the colour model. ■ Many ways to effect text.	■ No software available that makes use of the colour.

Paper handling is good. The *LC-10* comes with a novel paper parking facility which means you can use single sheets without removing your tractor paper. Simply by touching a button the continuous stationery will be reverse fed and parked. This then enables you to automatically load single sheets. With a touch of another button, you can refeed the tractor paper and resume continuous printing.

Unfortunately it isn't possible for the standard *LC-10* printer to be upgraded to the colour version. However, the colour model can use the cheaper black ribbons.

The colour *LC-10* represents something of a breakthrough in terms of value. Its printing facilities, large number of NLQ fonts, nifty paper-feeding mechanism and tough surround make it ideal for office and home use.



Qualitas Plus

Seven Stars Publishing, £12.95 tape, £14.95 disk

Seven Stars' print-quality enhancer is back. It first appeared in July last year (reviewed issue 22) under the title, *Qualitas*. Like many programs it has sprouted a Plus. At the time there didn't seem much that could be done to improve its performance. However, the latest incarnation now caters for a larger proportion of printers and can be used with more commercial software.

Qualitas Plus provides a simple front for reproducing high-quality typefaces on almost any printer. In addition, text can be micro spaced (which means the spacing between each word can be made identical). These typefaces can be used from several pieces of commercial software – like *Protext, Tasword, Mini Office II* – or within your own home-grown programs.

Before you can begin printing pretty prose, it is necessary to configure *Qualitas*. The program needs to know which word-processor you intend using, the make of your printer, whether you have an 8-bit printer port and which fonts you wish to use. Five fonts are supplied; Clarion, Elite, Mercury, Piazza and Pica. Others can be added to the system (see box). Up to three fonts can be selected depending on the host program and which loader you are using.

There are four versions of *Qualitas* which all come on the one disk. The standard version is suitable for use with unexpanded machines (that is, computers with 64k). *Qualitas* takes up memory; fonts take up even more. In some cases it may only be possible to use one or two typefaces. For this reason Seven Stars have included a 6128 (or 464/664 with extra memory) version that resides in the second 64k bank. This means the host program, *Tasword* or *Protext* say, has all of the main memory to play with. Special 128k versions of *Qualitas* exist for use with *Mini Office II* and *Tasword 6128*.

Once *Qualitas* has been customised it's ready to use. The program is run and remains in memory, almost invisibly, until summoned. While *Qualitas* is switched on, printer codes which are not valid *Qualitas* codes will be ignored. If you wish to send control codes to the printer, *Qualitas* must be switched off. So you can switch in and out of *Qualitas*-quality print and standard print.

Normally *Qualitas* justifies lines with equal spaces between words. This function can be turned off. All other printer functions – subscript, superscript, double-width and underline – work as normal when *Qualitas* is in control. An option is included which produces double-height characters.

The program works happily with most kinds of printer – including Shinwa CP80 compatibles (Mannesmann Tally MT80, Tatung TP80 and so on). It also runs smoothly with the Amstrad's 7-bit printer port. Of course, better results are possible with an 8-bit interface. *Qualitas* really pushes your printer. The output looks clean and professional.

Contacts

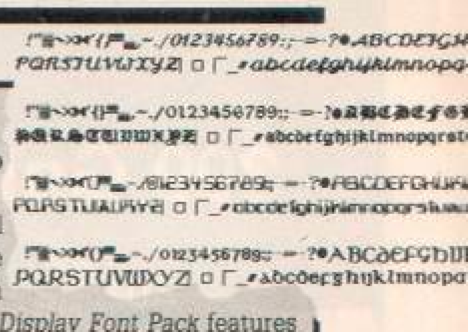
KDS Electronics ☎ 04853 2076
15 Hill Street, Hunstanton, Norfolk, PE36 5BS

Seven Stars Publishing ☎ 06284 3445
34 Squirrel Rise, Marlow, Bucks, SL7 3PN

Star Micronics ☎ 01 8401800
Craven House, 40 Uxbridge Rd, Ealing, London, W5 2BS

Qualitas Font Pack

Seven Stars, £9.95 disk only, £6.95 to upgrade



In issue 29, Pat McDonald looked at several of the *Qualitas Font Packs*. There are three packs in total, each comes saturated with new typefaces for use with *Qualitas*. The *Display Font Pack* features ten fonts. Five full alphabets and five headline-fonts (consisting of capital letters only). The character sets have such imaginative titles as Chelsea, Minstrel, Xenon and York Outline.

The other two packs consist of roughly 16 variations of two fonts, Pica and Clarion. Many symbols are also thrown in.

To get the best results you will need KDS's 8-bit printer port, otherwise you'll lose the top row of dots that make up the letters.

GOOD NEWS	BAD NEWS
■ Print quality produced is exceptional. ■ Works with a wide range of printers. ■ Comes with several elegant typefaces.	■ Not compatible with all commercial software.

8-bit Printer Port

KDS Electronics, £19.55

Your CPC computer has a 7-bit Centronics printer port rather than the more usual 8-bit port. Why Amstrad decided on this is anyone's guess. The missing bit isn't a terrible omission, but it means you can't make full use of your printer.

KDS produced a tiny gadget for adding the eighth bit to the computer several years ago. But that model needed to be removed when not in use. The latest version sits in the printer port minding its own business until required.

The 8-bit port plugs into the existing printer interface. It consists of a through connector and a few compoYour CPC computer has a 7-bit Centronics printer port rather than the more usual 8-bit port. Why Amstrad decided on this is anyone's guess. The missing bit isn't a terrible omission, but it means you can't make full use of your printer.

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The 8-bit port plugs into the existing printer interface. It consists of a through connector and a few components. Its design means that most of it is tucked inside the computer, out of view. The fitting is tight, but once in position there is no need to remove it ever again.

The port can be used from Basic, machine code, CPM 2.2 or CPM Plus. To get the port to accept 8-bit data from Basic, you must enter a short program. This routine can be tagged to the loader of your word-processor or utility. *Tasword* and *Protext*, for example, are easy to customize.

Configuring the CPM 2.2 or CPM Plus system disks is a little trickier, but not impossibly so. Once they are modified there is no need to go through the performance again.



With the unobtrusive port plugged in, you will be able to print characters with codes above 128. However, it is almost certain that your printer's symbols above 128 won't correspond to those found on your computer. Say you sent code 164 to the printer (which the computer understands as the copyright sign), the item printed on paper may be a graphic block, an italicized percentage symbol – in short, anything. You'll have to refer to your printer's manual to discover exactly what will be printed.

You will get extra symbols and possibly different fonts, but it's dependent on your printer.

GOOD NEWS	BAD NEWS
■ Fits neatly into printer port. ■ Once in place it need not be removed. ■ Gives access to other printer functions.	■ Some commercial programs will switch the port out – check with KDS or the producers of the program concerned to see if this is the case.

S.D.C.

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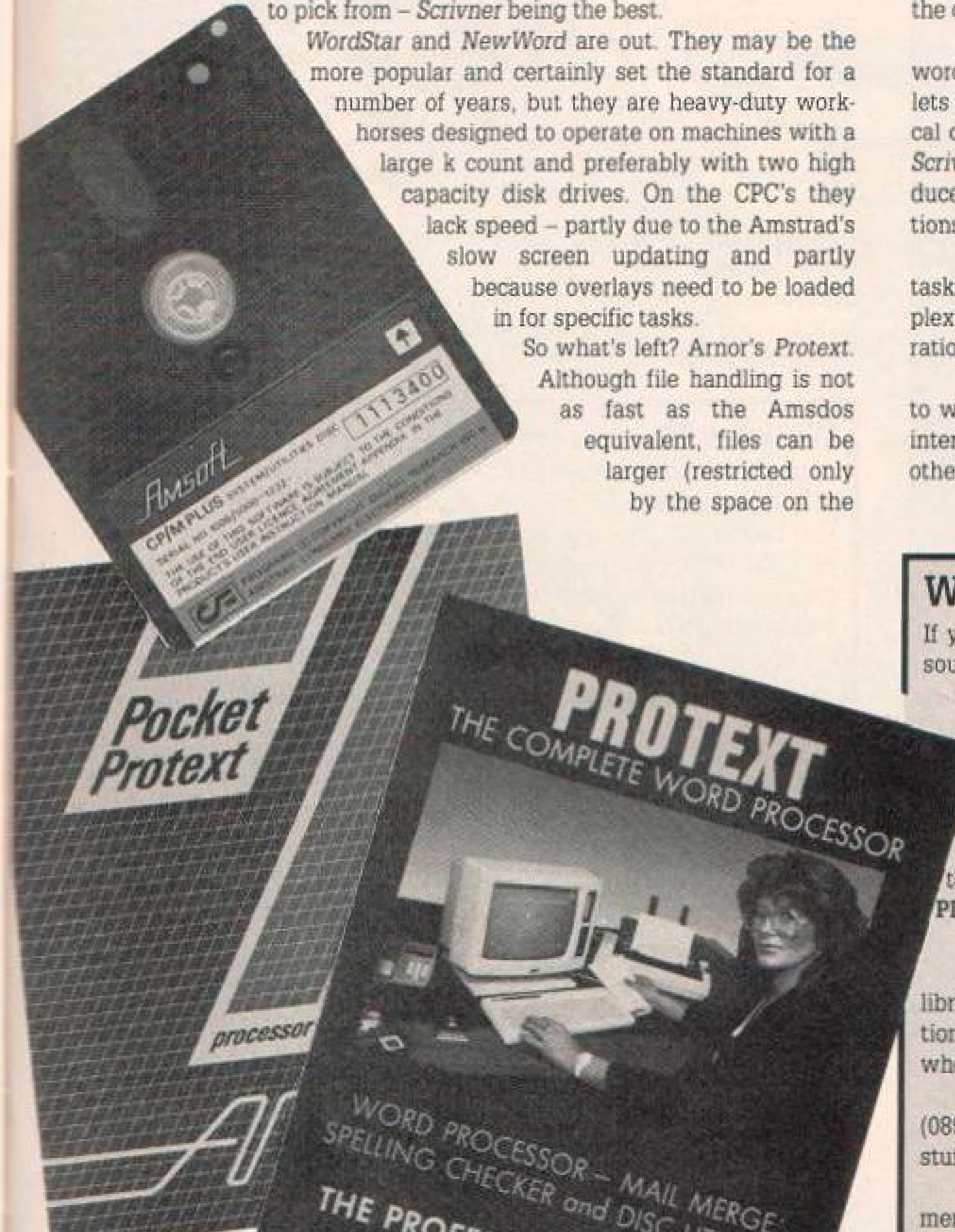
From freebies to fully-priced, Richard Monteiro gets to grips with the delights of CPM software

Education seems to be the theme of the issue so, logically, we should be looking at educational public domain or full-priced CPM software. Try finding any. We managed to track down two volumes in PD Software's library. Sadly they didn't quite make it for the issue. However, if you're interested they are under KUG (volume 8) and the US National CPM Volumes (number 18). PD Software's address is in the "Where to go" box. If you know of any other educational software, drop us a line.

One problem facing CPM users is which word-processor to choose. In the fully priced league there's the archaic *WordStar*, *NewWord*, *Protext* and *Pocket Protext*. In the public domain stream there are numerous to pick from – *Scrivner* being the best.

WordStar and *NewWord* are out. They may be the more popular and certainly set the standard for a number of years, but they are heavy-duty workhorses designed to operate on machines with a large k count and preferably with two high capacity disk drives. On the CPC's they lack speed – partly due to the Amstrad's slow screen updating and partly because overlays need to be loaded in for specific tasks.

So what's left? Arnor's *Protext*. Although file handling is not as fast as the Amsdos equivalent, files can be larger (restricted only by the space on the disk), printing options are better and many handy utilities are thrown in. The full-blown version – which consists of word-processor, mail merge and spelling checker – weighs in at a hefty £59.95. *Pocket Protext*, which has had the mail merge and spell checking facilities stripped from it, currently costs £29.95.



Budget processing

VDE231 is one of the better public domain word-processors. It is *WordStar* file and key compatible. Its only restriction is the maximum document size. This is dependent on the amount of memory your computer has – unlike other CPM applications which use all the available space on the disk.

A PD curiosity is *Scrivner*. This combines the best elements of a word processor, spreadsheet and database. The result is a program that lets you create and print letters and documents, and perform mathematical calculations on specified areas of the text. There is such potential to *Scrivner* – especially for the small business. At its simplest, it will produce letters, memos and documents. It will also do more complex calculations that traditionally require a spreadsheet.

Just as a spreadsheet will work on models, so *Scrivner* works on tasks. The simplest being a text file with some addition to do. More complex things like analysis of variance, profit and loss accounting and corporation tax can similarly be worked out.

Of course, all this power doesn't come easily. There is a 40k help file to wade through first – and that's in its compressed form. But if you're interested, try Wacci (address below). They have *Scrivner* and a bundle of other serious software applications on one disk.

Where to go

If you want to get hold of public domain software, there are several sources which may be of interest:

CPM User Group: 72 Mill Road, Hawley, Dartford, Kent, DA2 7RZ

PD Software: Winscombe House, Beacon Road, Crowborough, East Sussex, TN6 1UL

Triple Zero Services: 23 broad Lane, Essington, Nr Wolverhampton, Staffordshire, WV11 2RG

PD-SIG: 90 Braybourne Close, Uxbridge, Middlesex, UB8 1UJ

Most of these firms publish a newsletter and have vast software libraries; not all will be of interest to you. There is usually a subscription and copying fee for each disk. Do remember to enclose a SAE when enquiring.

User clubs are also a good place for getting public domain. Wacci (0895 52430) in particular have a selection of disks crammed with stuff. Well worth checking.

The United Amstrad User Group offer free PD software to club members – free PD software? But surely it's free anyway? Yes, but most libraries charge a handling fee. To enroll as a UAUG member you must send £5 to 1 Magnolia Close, Fareham, Hants, PO14 1PX. For this you get a bi-monthly magazine and access to 2 megabytes of PD software. Enquiries on 0329 281324.

If you have a modem, you can download software from bulletin boards. Try 0462 700893 during 10pm and 8am or 0902 788683 morning or evening.

Before you order disks and disks full of PD software, you might like to try getting your hands on *The Free Software Handbook*. This book published by PeopleTalk Associates covers the best public domain software available. It is updated every year. Its ISSN number is 0742-048X.

We shall continue to update this list, so if you know of any worthwhile libraries, bulletin boards, or user clubs do get in touch

Feedback

Over the next few months we shall be uncovering CPM's secrets and looking at the many programs available, but we need your help. Are you using a piece of CPM software – public domain or full-price – that is worth a mention? Do you know any good sources of PD software? If you do, write in and tell us. Where possible include the name of the program, the address and phone number of the User Group that you got it from and a brief description of what it does. Write to **Bar CPM, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ.**

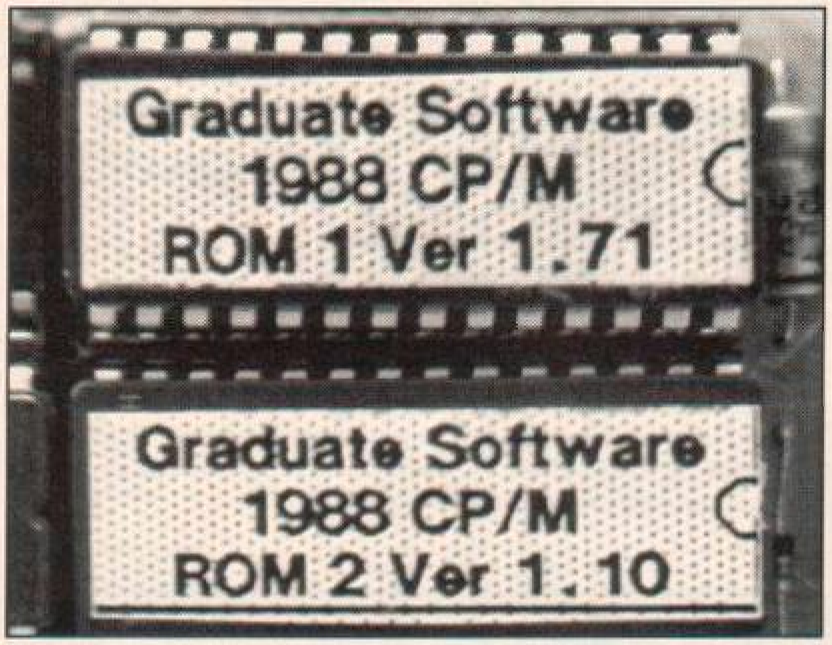
CPM on ROM

Richard Monteiro discovers that you can get CPM on rom instead of disk – with extras too.

CPM Plus on rom

Graduate Software, £24.95

Bristol-based Graduate Software have found an ingenious method of speeding up the CPM Plus boot process. They've put the whole caboodle on rom; two in fact. And it is perfectly legal. You dispatch your original CPM Plus system disk and £24.95 to Graduate who, after a few days, will send you a manual, two roms containing the CPM operating system and your system disk. If you have a silicon disk send Graduate the manual: they'll put a routine on the roms allowing you to access the silicon disk.



The two roms will need to be fitted into a romboard before you can make use of the rommed system. When the roms – which can occupy any slot numbers except 0 – are finally placed in a board and you switch on your computer you'll notice a colourful, personalised sign-on message.

Several new commands come into play once the roms have been installed. Simply entering **|EMS** causes the screen to change mode, a message to appear – proclaiming the number of drives and other paraphernalia attached, your name and the serial number of your original CPM Plus system disk. It also causes the almost familiar CPM prompt to make an appearance. Almost familiar because gone is the usual greater than symbol (>); a right-pointing arrow takes its place. Graduate say they modified the prompt to indicate that additional CPM Plus commands are available.

Pick a board

If you haven't already got a romboard, and you intend getting CPM Plus on rom, then you're going to need one. The best – and also the most expensive – comes from Rombo Productions. Their *Rombo Romboard* has eight sockets with dip-switches to turn individual roms on or off (saves you having to remove the romboard when certain commercial software complains). Rombo is available from Rombo Productions, (0506) 39046, at £34.95. Alternatively there's the KDS 5-way sideways romboard at £29.90. KDS are on (04853) 2076.

With a fair proportion of software (*Gauntlet II* and *Discology*, for example) it is necessary for you to enter the **|CPM** command to load them. For this reason Graduate chose **|EMS** – which is short for early morning start – to enter CPM Plus. If you want to save on keypresses then **|O** is a finger conserving alternative.

Put the boot in

Parameters may be added to the boot command. For instance, **|EMS, "filename"** will enter CPM and (assuming you have a disk in the drive) run the program with the filename in quotes. Other commands can also be included: **|O, "mode 1"** will enter CPM in Mode 1. There are countless time saving possibilities.

If you're not sure of the files that exist on a particular disk, **|OP** will display a menu of all COM files. By pressing a number corresponding to a file you can enter CPM Plus and have the chosen file automatically run.

The handful of other RSX commands will let you password protect your Basic programs and print various messages regarding the roms.

By your command

Along with the standard in-built CPM plus commands (**DIR**, **TYPE**, **USER** and the like), Graduate have added a number of new commands and allowed commas to be used as delimiters (**DIR,*.COM** for example). No loss of memory or TPA (transient program area) is incurred with these additions. The extra commands make CPM Plus much more friendly. Many of them can be entered in a similar manner to standard Basic instructions:

BORDER – changes border colour and works like its Basic equivalent.
CLS – clears the screen.
INK – identical to the Basic command (INK 1,26 is acceptable).
MODE – calls up either 20, 40 or 80 column screen.
INVERSE – swaps foreground and background colours.

Works with

CPM plus comes as part of the 6128 package. 464 and 664 owners get CPM 2.2. Graduate only put CPM Plus on rom. If you haven't a CPM Plus system disk, but have an expanded 464 or 664 (that is, a machine with the Dk'tronics 64k memory pack) it might be worth getting a copy of CPM Plus as Graduate's roms are tailored to work with these computers. CPC Ltd from Preston, Lancashire, sell the disk. £20.04 is the price to pay. 0772 555034 is the number to ring.

Commands can be chained together via the exclamation mark (!). Basic uses the colon. Things like **MODE 2!INK 1,20!DIR** are permissible. Incredible. Graduate have really lifted CPM Plus into a friendlier, easier to use operating system.

Function keys can be defined easily: **EXPAND 128 "CLS$DIR *.COM"** would cause the screen to clear and a directory of a disk to appear when function key 0 was pressed. Normal, shifted and control keys can be redefined with the KEY commands.

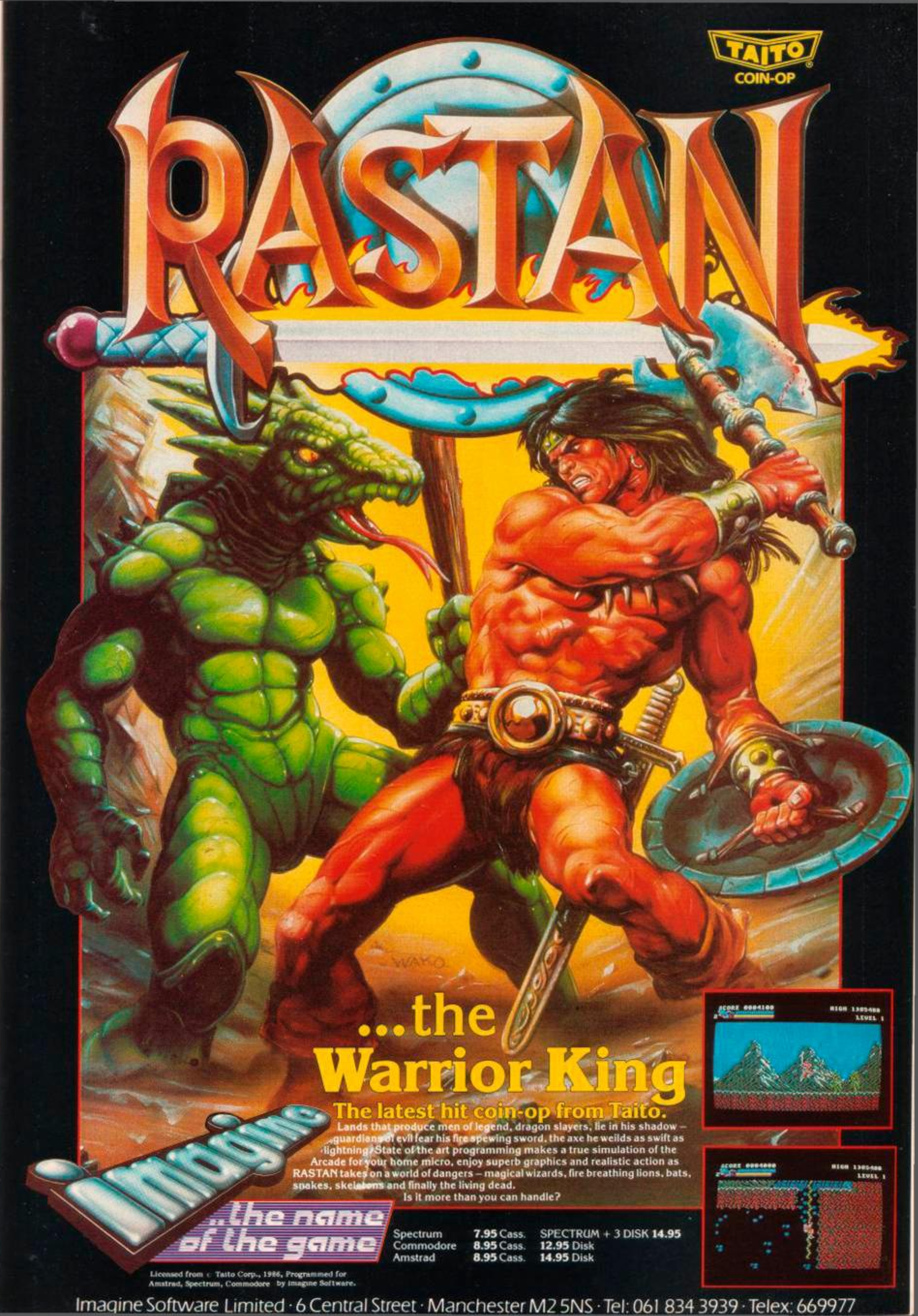
There are other commands to set the size of the screen, wait for user input, initialise the printer, choose a language character set and erase files.

Graduate have incorporated a command to switch to standard CPM Plus, **CCP**, in the event of certain software complaining. We had no problems or cause to use this command while playing with the system.

If you use CPM Plus frequently, Graduate's service will come as a godsend. The volume of helpful commands, the ease with which CPM Plus can be manipulated and the obviously faster start up time make this a very worthwhile system.

Graduate Software ☎ 0272 656659
19 Everest Road, Fishponds, Bristol

GOOD NEWS	BAD NEWS
■ CPM plus available in a twinkling. ■ Applications can be run from Amsdos. ■ Extra commands give CPM Plus Basic-like flexibility.	■ Occupies two roms.


TAITO
COIN-OP
RASTAN
...the
Warrior King
The latest hit coin-op from Taito.
Lands that produce men of legend, dragon slayers, lie in his shadow – guardians of evil fear his fire spewing sword, the axe he weilds as swift as lightning. State of the art programming makes a true simulation of the Arcade for your home micro, enjoy superb graphics and realistic action as RASTAN takes on a world of dangers – magical wizards, fire breathing lions, bats, snakes, skeletons and finally the living dead.
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IN THE HOME: The Amstrad PPC is a sophisticated personal computer that is portable enough to take home every day. So you can stay in touch with market movements for example, on a 24-hour basis. Or simply catch up on outstanding work at the end of a busy day.

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Amstrad plc., PO Box 462, Brentwood, Essex CM14 4EF. Telephone: (0277) 262326.

!! NOW SPEEDTRANS PLUS HAS EVEN MORE TO OFFER !!
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For CPC6128 (or 464/664 with DK Tronics 64K (or larger) Memory)
Once the programs has been transferred to disc IT WILL RUN ON ANY CPC.

SPEEDTRANS PLUS2 now handles the VERY LATEST Speedlock types automatically. No need to hold a key down at anytime during loading. SPEEDTRANS PLUS2 also saves 99% of opening screens and saves them in their full colours

FULLY AUTOMATIC – JUST ONE KEYPRESS * ONLY ONE PROGRAM TO RUN WHICH FINDS THE SPEEDLOCK TYPE AUTOMATICALLY * WILL TRANSFER ORIGINAL AND MANY OF TODAYS SPEEDLOCK PROGRAMS * NO FIDDLING OR MEDDLING – WRITTEN WITH THE AMATEUR IN MIND * AUTOMATIC DISC FILENAMES * NO WASTED DISC SPACE – SAVES THE CORRECT AMOUNT OF GAME CODE * SAVES 99% OF OPENING SCREENS * SCREENS SAVED IN THEIR CORRECT COLOURS * COMPRESSES SCREEN CODE TO SAVE EVEN MORE DISC SPACE * FASTER LOADING TIMES FROM DISC BECAUSE OF SHORTER FILE LENGTHS
SPEEDTRANS PLUS2 transfers over 200 programs to Disc, some of hte latest it will do are MADBALLS, FREDDY HARDEST (both games) BASKET MASTER, MATCHDAY II, PHANTOM CLUB, GRYZOR (main program), SUPER HANG ON.

These latest Speedlock types can be identified by the whole screen flashing with horizontal bands of colour immediately after the first file has loaded. Do remember that **SPEEDTRANS PLUS2** does not save all the memory in the hope of having saved all the game. It saves exactly the right length of code. All screens are saved in compressed form – some as little as 4K (Basket Master) - thus saving even more disc space.
SPEEDTRANS PLUS2 is the most sophisticated Tape-to-Disc transfer utility for SPEEDLOCK protected programs ever published. It will certainly transfer more games than any other Speedlock transfer program on the market and with much greater ease. Other transfer programs require you to know how long the game code is so that you may run an alternative program for the long games which does not save the loading screen. This is done because they do not make use of the extra memory available on the CPC 6128 or from the use of an extra RAMPACK (DK'Tronics 64K or greater.) This program is highly intelligent in that it first reads the loader from the tape and establishes which type of protection is in use from 6 alternatives. At the end of the loadit then finds out how long the code is and if it is too long to be saved to one file it will move the excess code into the banked memory and save the game in two parts and write the appropriate loader program. The screen will also be moved into a bank and compressed before saving. This can mean screen files as small as 4k (Basket Master) depending on mode and content. All this adds up to a lot less disc space being used than with other transfer programs and you will nearly always get the loading screen saved. The exception to this is when there is no loading screen (as in SCRABBLE) or when the screen is blanked out and more code is loaded into the screen memory, as in BMX SIMULATOR and MADBALLS for example. Try getting a screen with Multiface or any other imager. These imagers are only capable of saving what you have in memory at the time the button is pressed. What happens in multi part games? you have to press the button for each part thus wasting precious disc space. They also save far too much code and therefore waste even more space and saving too much code means longer loading times from disc. Programmers are now checking to see if you have an imager plugged in an if you have the program will not load. Imagers also have to be in place before you can reload your program and saved programs can only be reloaded in to the machine in which they are saved. **SPEEDTRANS PLUS2** creates totally stand-alone files and if you have nother CPC even without extra memory they wil run prefectly. It also displays the saving name on screen at the start of the load with all except the very latest games. In all cases the disc saving name is displayed while the save is carried out. To run the transferred game just RUN this name. Another intelligent feature of **SPEEDTRANS2** is that the very first thing it does is to find out which drive it is in. This means that if you have a two drive system you may run the program from drive B by typing RUN "B:DISC" or :B:RUN"DISC. However the saving will ALWAYS be to DRIVE A so with a single drive you must change the disc when prompted on screen.

DISC:- UK £14.99 – EUROPE £16.25 – REST OF WORLD £17.00
Upgrade your SPEEDTRANS PLUS – send your disc together with: **UK £2.00 – EUROPE £3.25 – REST OF WORLD £4.00**
Upgrade your SPEEDTRANS TAPE send your tape together with: **UK £12.00 – EUROPE £13.25 – REST OF WORLD £14.00**

DMP 2000/2160/3000/3160

BUFFER UPGRADE KIT

The printer buffer presently in the DMP 2000/3000 series is a 2K RAM. Most of this RAM is used by the priunter's operating system leaviing, on average, 1/2K as buffer space. Our upgrade kit contains a new static RAM chip which will increase the printer buffer by 6K (about 4 pages of text). This upgrade allows all Download Characters to be re-defined allowing the user to design special characters for use with scientific and other programs. The kit is supplied with full pictorial instructions to allow the amateur to carry out his own modification (the DMP2160 takes about 7 minutes). If you dont think you are up to it your local TV shop can do the job in approximately 15 minutes.

UK £6.50 – EUROPE £7.75 R.of W. £8.50

C.ITOH M8510+ PRINTER

This printer is also labelled ACT Writer, NEC, DEC, Apple DMP, Digital LA50. We own one and have found it very good but totally Epson incompatible! We needed to do screen dumps and could not find a program suitable for it so we wrote one. If you have a CITOH and have been looking for a screen dump utility look no further. It gives a well shaded, full width and fully proportional dump.

TAPE:- UK £4.50 – EUROPE £5.75 – R. of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

MANNESMAN/SHINWA SPIRIT/SEIKOSHA PRINTERS

We also have a screen dump program for the following printers: Mannesman Tally MT80 and MT80+, Tally Spirit MT80, Walters WM80, Sun SX80P, Seikosha SP80, Shinwa CP80/MY80/MM/SF80, Commodore CP80, 1526/4023/MP802, VC1516. It is possible that it will work on other printers of this type. This dump gives a well shaded, full width and fully proportional screen dump.

TAPE:- UK £4.50 – EUROPE £5.75 – R.of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

FIRETRANS

This utility will transfer a number of FIREBIRD programs from tape to disc automatically including most opening screens in full colour. FIRETRANS will work equally well from tape but will be more convenient to use if converted to disc with SAMSON/Transmat. It wil transfer WILLOW PATTERN, RUNESTONE, CHIMERA, GUNSTAR, PARABOLA, REALM, SPIKY HAROLD, BOOTY, DONT PANIC, GUNFRIGHT, STARGLIDER, NINJA MASTER, HELICOPTER, and some versions of THRUST, HARVEY HEADBANGER and BOMBSCARE

TAPE:- UK £5.00 – EUROPE £6.25 – R. of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50.

NEW COMPACTOR NEW

COMPACTOR will allow you to load a standard 17K screen, set the mode, border and ink colours and then save it as a compressed screen containing its own mode and ink colour informaiton. Most screens compact down to an average of 9K which is an enormous saving on disc space. Loading time of compressed screens is also proportinally reduced.

TAPE:- UK £5.00 – EUROPE £6.25 – R.of W. £7.00
DISC:- UK £8.50 – EUROPE £9.75 – R. OF W. £10.50

FAST FORMATTER

The **FAST FORMATTER** will format one side of a disc in approx. 30 seconds with the choice of DATA, VENDOR or SYSTEM and its much easier than using your CPM disc.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

TRANSIT

TRANSIT is a disc-to-disc file copier which handles files up to 40K in length in one pass. It wil copy from drives A-A, A-B, B-B and B-A making an ideal utility for use with 5 1/4" second drivea.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

QCLONE

QCLONE is a whole disc copier which copies by tracks and sectors allowing you to back-up your discs quickly an deasily. Again it will handle all drive combinations. It wil not, however, back-up discs with comercial protection.

TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50
DISC:- UK £8.00 – EUROPE £9.25 – R. of W. £10.00

VIEWTEXT

VIEWTEXT is a utility that will allow you to load a Binary file into the computer and scan through its contents to see any passwords or word table and also any messages put in by the programmer. It is especially useful, when stuck in an adventure, to find passwords etc. which will help you to finish some difficult games.

TAPE:- UK £2.00 – EUROPE £3.25 – R. of W. £4.00
DISC:- UK £6.00 – EUROPE £7.25 R.of W. £8.00

UTILITY DISC No. 1

This utility disc contains 5 programs, all menu driven. They are **SAMSON, TRANSIT, QCLONE, VIEWTEXT** and the fast disc **FORMATTER**.

DISC:- UK £15.50 – EUROPE £16.75 – R. of W. £17.50
ROM:- UK £17.25 – EUROPE £18.50 – R. of W. £19.25

3" PANASONIC DISC BOXES

Rumour has it that Amsoft/Panasonic no longer supply boxes with their discs. We have approx 1000 boxes remaining at 25 pence each. Regretfully we can only supply boxes if accompanied with a minimum order for Software/hardware of £15.00 unless extra monies are enclosed to cover postage.

NEW NIRVANA NEW

Have you tried backing up your original expensive disc software and failed? Use NIRVANA before its too late! NIRVANA (meaning enlightenment) is an extremely powerful disc handling utility which has the following features: Disc to disc back-up copier which will handle most of the commercially protected discs available today. File copier for individual files. Disc formatter, much easier to use than CPM. Change file attributes. Erase files. Change filenames. Wil handle all disc drive combinations

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW SHAREPLAY NEW

THE STOCK MARKET SIMULATION
(All CPC's)

This is a serious educatinal program for 1 to 6 players and provides all the enjoyment of playing the stockmarket without any risk of personal bankruptcy!! Each player can buy and sell shares and the target is the first to reach £1,000,000. The program includes a stockholding portfolio listing the shares purchased, their number, cost and market value. Bank balances are also shown. Graphical representation of market fluctuations are given in the form of a bar graph. Also included is a high score table. Scores are automatically saved at the end of each session.

DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00

NEW WORDSEEK NEW

THE WORDSEARCH PROGRAM
(All CPC's)

This educational program will tax even the most agile mind. The aim is to find the hidden words in a 15 by 15 puzzle within a set time limit of 30 seconds. The time limit is extended for every correct letter of the current word found. You may create your own puzzle consisting of up to 10 words which can be saved to disc and used at any time. You may only retain one puzzle at a time but if you choose not to use your own puzzle then the program will randomly select one form the library of 50 on the disc. All of the puzzles in the library are made up of 10 words each consisting of 1x8 letter, 1x7 letter, 2x6 letter, 3x5 letter, 2x4 letter and 1x3 letter words. This ensures equal difficulty regardless which one is randomly loaded. The program contains a print option (for Epson compatible printers) allowing a hard copy to be made of any puzzle created. Keyboard/Joystick options are also available.

DISC ONLY – U.K. £14.99 – EUROPE £16.25
REST OF THE WORLD £17.00

NEW TUNESMITH NEW

TUNESMITH is a simple to use sound utility which allows you to use the keyboard to play and record your tunes. No knowledge of music or Amstrad sound commands is required all you need to be able to do is whistle the tune you play or record. The octave and period of notes is variable and the program includes synthesizer and vibrato effects. **TUNESMITH** will save any tune as a basic file which can be RUN, CHAINED or MERGED into your own program.

DISC:- UK £14.99 – EUROPE £16.25 R. of W. £17.00

SAMSON

SAMSON has been developed by us to transfer not only the normal programs but also many of todays where the code is much longer. **SAMSON** differs in many ways from other Tape-to-Disc utilities, the main differences being: * SAMSON retains original file suffixes (SAMSON.SCN will be saved as SAMSON.SCN) * Improved file relocation method * Elaborate Tape-read/Disc-write system which reduces Tape Motor, Slave Replay and Disc Drive Motor wear substantially. * A large reduction in tape transfer time is also achieved in all but a few cases * NEW "SPLIT" option for todays longer games (we will be using this option in future routines) * All file information is displayed on screen and can be echoed to your printer if needed. SAMSON also transfer itself to disc.

TAPE:- UK £7.50 – EUROPE £8.75 – R. of W. £9.50
DISC:- UK £11.50 – EUROPE £12.75 – R. of W. £13.50

CHARACTER DESIGNER

(All CPC's)

- **REDEFINE YOUR PRINTER DOWNLOAD CHARACTERS**
- **REDEFINE THE COMPUTER SCREEN FONT**
- **REDEFINE ANY/ALL KEYBOARD KEYS (ASWERTY)**
- **DESIGN SPECIAL SCIENTIFIC CHARACTERS/FONTS**

Takes all the hard work out of character designing making it a pleasure. The printer part of the program will only work if your printer is capable of DOWNLOADING and is EPSON compatible – see your printer manual. Works with 7-bit or 8-bit output (8-bit port). All the designing is done "On-Screen" so you can see exactly what you are doing. You can save your newly designed charactes to disc and reload them at any time into a basic program and into most Word-Processors. The program also allows the user to redefine any or all of the keys on the keyboard. This features will be useful for those who require an ASWERTY keyboard. The disc also contins twelve sample fonts for experimentation

TAPE:- UK £7.99 EUROPE £9.25 – R. of W. £10.00
DISC:- UK £11.99 – EUROPE £13.25 – R. of W. £14.00

DISC HEAD CLEANING KIT

Stocks of these 3" head cleaning kits should arrive within the next few days. HIGHLY RECOMMENDED.

UK £8.00 – EUROPE £9.50 – R. of W. £10.00

Please send your cheque (£ Sterling) Eurocheque OR UK P.O. to
GOLDMARK SYSTEMS, 51 COMET ROAD, HATFIELD, HERTFORDSHIRE, AL10 0SY. ENGLAND
Please write or telephone 07072 71529 for further information

General Ledger

SD Microsystems, £19.95 disk only, £14.95 with Trader's Pack

Continuing their range of home-cum-business utilities, SD Microsystems have released *General Ledger*. The package is intended to complement their previous title, *Small Trader's Pack*. Essentially it is designed to handle input and output accounts, as well as cash and bank transactions – in short, present accounts in a form that will keep the VAT and tax people happy.

The program revolves round a ten-option menu. The command structure is similar throughout, with sub-menus appearing where appropriate. SD Microsystems have provided a specimen file which shows exactly what can be done with *Ledger*. It means you can become acquainted with the system before you start entering your own figures incorrectly.

Books vs Computer

A general ledger has two main functions in a small business: to record all financial transactions in an orderly fashion and to provide a wide range of useful reports. You could store all this information in books, but all the totals would need to be updated regularly by you – tedious and prone to errors. A computer can do the mundane functions many times faster and with 100% accuracy. Of course, the data output is only as good as the data input.

First on the menu is Account Codes. This consists of a list of items – sales revenue, expenses, overheads, direct costs and so on – that would normally apply to a business. The codes come pre-set but certain codes can be altered to accommodate your particular business transactions. For instance, if you where running a software company you might define areas of sales revenue as shop sales, mail order, services and export. Similarly your direct costs could include disks, cassettes, packaging and manuals. Any items you modify and save will automatically load when *General Ledger* is booted.

With your account codes sorted out, you are ready to start making your first entries. However, you must decide on your accounting periods. This determines how long a file continues in use until it is closed. It depends on the number of transactions going through your business during a given time. The conventional accounting period for most firms is one month. If you have many more comings and goings, then a week may be a better choice.



Once you have selected Data Entry all 40 of your account codes will appear. You then have the choice of entering a bank receipt, bank payment, cash receipt, cash payment or resetting the VAT rate. Each transaction requires details on the date, amount, description of transaction or goods, reference (cheque or invoice number), account code and VAT code (either zero rated, standard 15% rate or exempt).

After you've entered the details of all your transactions you have the option of displaying information on parts of the system. You can list all bank receipts and payments, produce a ledger listing which provides an audit trail, list account code entries and produce a VAT summary. Reports can be sent to either screen or printer.

Profit or loss?

Possibly the most important report of them all is the one produced by Trading, Profit and Loss. As its title suggests, it will indicate whether your business is trading profitably or not. The report is updated after every entry made into the current file. Direct costs are deducted from sales to show the gross profit (or loss). Overheads are then deducted from this figure to give net profit. Percentage gain on turnover is also printed.

After all entries for the current file are complete, you will need to save them for future recall. This can be done from the Disc Operations option. Also transaction files can be loaded, disks catalogued, files erased and account codes saved from this section.

Number seven on the main menu is Year to date/end summary. From here you can produce cumulative figures and a statement of account for the year, current date or indeed for any period.

Files can be organised into date order. This means you can enter all transactions in the order most convenient to you. For instance, you could enter all payments up to the present from your cheque book stubs. Then all receipts as shown in your paying-in counterfoils. Finally the various payment or petty cash vouchers could be entered.

Tax Relief

Will this new package for small businesses solve your tax muddles? Richard Monteiro gets his books in order.

Option number nine starts a new accounting period. Previous bank and cash balances will be carried forward to maintain continuity, but all other account totals will be reset.

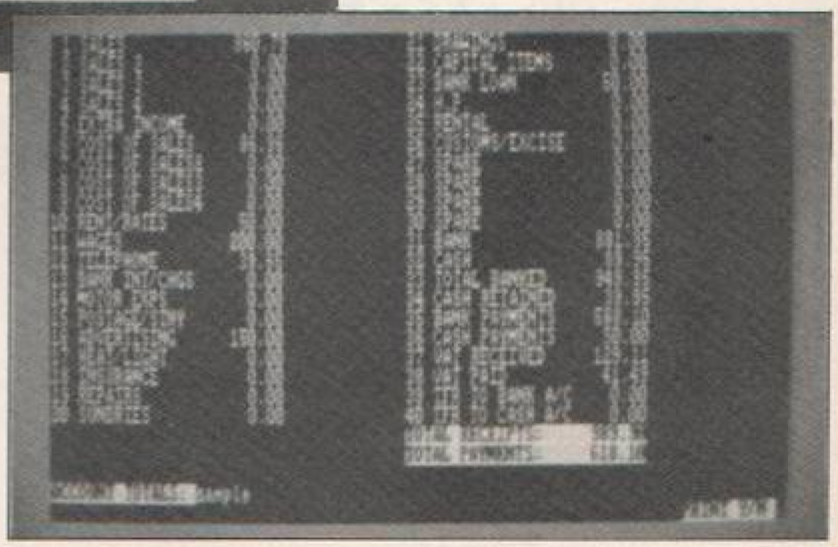
How often you update the system after initiation is up to you. At the end of each working week is probably the best. That is the time when you sit down at your computer with business bank books and receipts at hand. All the transactions since the previous update must be entered. Remember you needn't worry about the order in which you input transactions – the computer can sort them all into order for you. Once all the entries are in memory the file should be saved and reports printed. And that's all there is to it.

Calling businesses

Do you use your CPC to help with a business of any kind? Do you think it's particularly well or badly suited to the task? What sort of problems do you have getting the right software? We'd like to hear from you through our Reaction pages. So why not write in and let us know what you think about CPC's in business and our coverage of products like *General Ledger*.

General Ledger is very simple to use, it can store and display all the information required by the tax and VAT people and in the long run it will save you time and trouble.

SD Microsystems ☎ 0462 675106
PO Box 24, Hitchin, Herts



● Ledger's main menu

GOOD NEWS	BAD NEWS
■ Good manual. ■ Easy to use. ■ Faster and more accurate than ledger books.	■ Hitting Esc key and accidentally entering commas causes errors – no data loss though.

HOT TIPS

Do you have special tricks and tactics with serious software and hardware? Send them to Pat McDonald, "Hot Tips", Amstrad Action, 4 Queen Street, Bath, BA1 1EJ. Remember the best tip each month gets £20.

Eighth Bit... Again!

In the Hot Tips section in issue 28 there was a piece about an eight bit printer upgrade. I performed the hardware modification and the eighth bit of the port could be controlled by writing &2Ø or &ØØ to port &F6ØØ.

The article implied that by modifying line 7Ø in a program published in Hot Tips issue 26, the software would work on any CPC. This is not the case for two reasons :

1) The software assumes that the RST instruction at &BD2B is the same for all CPC machines. This is not true. On the 464 it is RST1, &87F2 and on the 6128 it is &881B.

2) The routine filters out line feed characters. There was probably a good reason for this, but to make the routine compatible with the resident printer routine, it should not do this.

The following listing gets around these problems. It copies the RST instruction found at &BD2B and hence should now work on any CPC machine. If you would prefer to filter out the line feeds, leave out line 17Ø.

```
1ØØ '8 Bit Printer Patch
11Ø 'Amstrad Action May 1987
115 'By Gerard Toon
12Ø a=PEEK(&BD2C):b=PEEK(&BD2D)
13Ø c=UNT(b*256+a)
14Ø IF c <> &BEØØ THEN POKE &BE16,a:POKE &BE17,b
15Ø FOR n=&BEØØ TO &BE15:READ a$
16Ø a=VAL("&"+a$):POKE n,a:NEXT n
17Ø POKE &BE13,Ø:'allow line feeds
18Ø DATA c5,Ø1,ØØ,f6,ed,49,Ø7,3Ø
19Ø DATA Ø5,Ø1,2Ø,f6,ed,49,Øf,fe
2ØØ DATA Øa,2Ø,Ø1,af,c1,cf
21Ø POKE &BD2B,&C3:POKE &BD2C,Ø:POKE &BD2D,&BE
```

Gerard Toon, Cumbria

Type-in additions

Here are a few tips which some readers may find helpful:

The first is for the game Dropout which appeared as a Type-In in AA3Ø. People who do not own a joystick may like to know that if they change numbers in brackets after the INKEY statements in lines 18Ø, 19Ø, 23Ø, 24Ø and 85Ø, they can control the pointer with the cursor keys; spacebar for fire.

```
18Ø change INKEY(74) to INKEY(8)
19Ø change INKEY(75) to INKEY(1)
```

PROBLEM ATTIC



Pat McDonald goes on another problem solving escapade. If your CPC's in danger, if you need help, then perhaps you can contact the AA team.

Disckit3 explained

Could you please explain how to copy one disk to another with a one drive CPC 6128?

Alan Cameron, Bathgate

There is a program on one of your system disks called DISCKIT3, Alan. Instructions are in Chapter 1, page 77, of your Amstrad manual. However, this cannot cope with commercial protected software – you will need a disc utility such as Bonzo Doo Dah by Nemesis, 10 Carlow Road, Ringstead, Kettering, Northants NN14 4DW. It costs £11.50. Alternatively Discoiogy produced by Siren Software, 2-4 Oxford Rd, Manchester M1 5QU. Discology is the better of the two, but costs £14.95.

Alarming knowledge

I am 16 and studying for a GCSE technology exam. For my project I am creating a burglar alarm controlled by an Amstrad CPC 464. I would like to know about the memory addresses, calls and pokes that access the user port.

G Woodall, Bedford.

If you don't mind delving a little into machine code and can wield a soldering iron (outside the computer!), I advise you to buy ***The Advanced Users Guide*** *by Daniel Martin, published by Glentop. Price £8.50. ISBN 1 85181 018 8. If you need a control device to be used from BASIC, Cirkit Distribution Ltd, Park Lane, Broxbourne, Herts EN10 7NQ do one for £26.90. This price includes the Eprom Software. Relevant Stock numbers are 41-03201 for the card, 41-03204 for the software.*

Ask a Simple Question...

I have, over the past year, worked steadily at learning machine code. I've written several RSX's and a headerless saver routine. But I need to know how to do IF-THEN routines in machine code.

S Payne, Blackpool

All computers must be able to perform comparative tests (measure one thing against another) and then make a decision based on the result. In machine code there are several ways of making comparative tests:

Double line-feed no more

Recently I purchased a DMP316Ø to compliment my CPC6128. Now Amstrad in their infinite wisdom say that both items are compatible and all that is required is the Amstrad PL-1 printer lead. This I duly purchased, only to find that it had permanent line feed when printing.

Thinking that I had done something wrong, I returned to square one. I tried every DIP switch combination in the manual, to no avail, still permanent line feed. By this time double line spacing was getting a bit of a bind. So back to the shop where I purchased the printer, for some spiritual guidance, but we could not identify the source of the problem. Then I enlisted the help of my next door neighbour, a fellow Amstrad owner (upgraded 464). I took my software, printer and lead to him to be checked out. This was duly done, my lead and software worked OK on his printer, but mine still produced double line feed.

Back to the drawing board. I read the printer manual from cover to cover, still to no avail. What now I asked myself; so I had cup of tea to refresh the old grey matter. Eureka! A flash of inspiration. Looking at the interfacing of the two I found the incompatibility to be PIN 14. Looking at both manuals it can be seen that PIN 14 on the printer input plug is designated AFD bar, and the 6128 printer port PIN 14 is designated GND. AFD bar requires a low or GND to produce a line feed. So with permanent GND from the computer, there is bound to be a constant line feed.

To cure this I employed the assistance of a 1/16 of an inch strip of sellotape, to insulate PIN 14 of the printer plug. The proof of the pudding is in the eating they say, so out came the software once more. Hey presto, now there is only a line feed when there should be a line feed.

G S Wilson, Morayshire

```
23Ø change INKEY(72) to INKEY(Ø)
24Ø change INKEY(73) to INKEY(2)
85Ø change INKEY(76) to INKEY(47)
```

Remember, just change the numbers in brackets, leave the rest of the lines as they are. The next addition is for the Hacker program which was also in AA3Ø. When you run the program it automatically saves itself. To get around this add the following lines.

```
81 PRINT "Do you wish to re-save (Y/N)?"
82 A$=UPPER$(INKEY$):IF A$=" " THEN 82
83 IF A$="Y" THEN 9Ø
84 IF A$="N" THEN 12Ø
85 GOTO 82
```

Another hint for Hacker is, if like me your eyesight is not what it was, change lines 1Ø and 8Ø from `MODE 2` to `MODE 1`. You can see all those lovely pokes much better.

J Love, Lanarkshire

Protection racket

Here is a tip for protecting disks from being copied using the free disk copying utility supplied with disk machines, that is, DISCKIT2 or DISCKIT3. All you need is a sector editor and Rainbird's *Starglider* on disk.

First of all, format a blank disk to DATA format. Load up a sector editor such as Gremlin's *Pyradev*. Insert the *Starglider* original master disk and go to track Ø sector 41 or C1 depending on your disk. Press the key which reads a sector. Insert your blank data format disk into the drive and press the key which writes a sector. Now try cataloging your disk; it should show Øk free. It will now be very difficult to copy.

Stephen Trimmer, Kent

Obvious, really

I would just like to point out to J Nieurzyla in AA31's Problem Attic that a routine to print down the page instead of across is included in the DMP2ØØØ manual.

P Stockdale, South Humberside

CP number or register with the accumulator (The A register).
XOR, OR, AND number or register with the accumulator.
INC, DEC registers

All of these operations affect various bits in the flag register; the zero flag, the carry flag, the overflow flag, the sign flag and so on. So the simple principal is, put the variable into the accumulator, test it, and if the test is correct, jump (or CALL) a special routine. For instance:

```
           LD A,(COUNT)
           DEC A          ; This could be INC,or XOR,OR,AND
etc
           CP Testvalue
           JR Z,CORRECT
           JR CONTINUE
CORRECT:   .....          ; Condition has been met.
CONTINUE:  .....          ; Condition was not
met.
```

I suggest you read a good book on the Z80, such as ***Programming the Z80*** *by Rodney Zaks, ISBN0-89588-069-5, published by Sybex Inc. This could prove a little stodgy though. Try browsing through a good computer shop's bookshelf before deciding on one. Good luck.*



Printer questions

My current choice of printer is limited to two second-hand types, that is, the DMP1 or the DMP2000. I know the DMP1 is a lot cheaper, but why? I want to use it for letters at first, maybe graphics later.

1) Could you give me an example of DMP1 print?
2) Will I be able to use graphics/screen dumps on it?
3) Would you advise me to buy one?
4) Why isn't Problem Attic bigger?

J Florek, Runcorn

Okay, I've owned one of these beasties. Here goes;
1) The type quality is poor, with no true descenders or NLQ.
2) Tascopy will work, but most do not. Not a good graphics mode.
3) No. Get one of the newer DMP models.
4) I blame a faulty pituitary gland myself.

I have just purchased a DMP3000 printer. After reading your magazine, I find that it is no longer being manufactured. Could you please tell me the reason for this as I don't want to think that it is no good. If it was, the shop would have withdrawn it, wouldn't it? Please make things a little clearer.

D Lees, Oldham

If your printer does what you need it to do, then it is a good printer. There was no technical fault with the DMP3000. The DMP3160 was being sold at the same price with a better performance – the DMP3000 could not compete except by lowering the price. Amstrad dropped it instead. However, DMP printer ribbons are compatible with all the range, so your printer will be useful for years to come.

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ACTION TEST

There's a real mixture of delights on offer this month. There are incredible graphics and gameplay in Cybernoid. Addictive action in the Arkanoid sequel.

The action doesn't let up in the Spy vs Spy Trilogy, but it takes on a more serious guise in Platoon. There are even driving thrills in Nigel Mansell's Grand Prix. Plus Predator, Side Arms, Pirates and many more.

PLATOON

Ocean, £9.95 cass, £14.95 disk, joystick or keys

The average age of a combat soldier in Vietnam was nineteen. You control five such young men, members of a platoon deep in the heart of enemy territory. A gruelling ordeal lies before you as you try to fight through the six sections of the game.

In the first stage of the game, the jungle, you have a side on view of the currently selected soldier and his surroundings. You must travel the labyrinth like paths of the jungle looking for some TNT left by a previous patrol. This is needed to blow a bridge at the end of the stage. Once you've got the explosives you then have to find the bridge, cross it and plant the TNT.



●A cong tries toknife you

Of course the jungle is not deserted, there are many Viet Cong troops out there just waiting to kill you. They run along the jungle paths, drop from the trees and snipers hide in pits out of sight. There are also tripwires across the path which set off grenades when you, or the enemy, hit them. Every time one of your platoon is hit a menu appears that lets you choose which man you want to control next. You can also call up the menu at anytime if you want to change men. A hit loses you some morale and running out of morale loses you the game.

After the bridge comes the Vietnamese village where you have to find a map, torch and trapdoor to take you to the third part of the game. All three are inside huts in the village. Not all of the huts are empty and some of the objects are booby trapped to catch an unwary soldier off guard. Enemy troops still wander around, only this time there are villagers too. Don't shoot the villagers because you'll lose morale. This is only a short stage because there are only six huts to investigate and then it's on to the tunnel.

GREEN SCREEN VIEW

The tripwires are even more difficult to spot in green than in colour, but the rest of the game is clear enough.

One by one the members of the platoon go down into the tunnel and attempt to find two boxes of flares and a compass. The tunnels are full of hostile troops. They appear either in the distance and walk towards you or they leap up from under the water in front of you. The ones that do appear from under the water are difficult to kill because you have so little time to react. There are rooms to be searched that will usually have something of use in them. There are two types of room: those with desks and the those with crates. The desks are where you're likely to find the compass hidden in one of the drawers. Crates contain ammunition, flares, medical kits, Viet Cong weapons or nothing. The medical kits help to restore the health of your soldier and ammunition is always needed. Some of the rooms with crates have ladders in them, but only one takes you out of the tunnels.

Night has fallen in the fourth stage of the game and you're resting in a foxhole. A group of Viet Cong troops suspect your position and start to stalk towards you. They're only shadows in the moonlight until you shoot up a flare, then they come into clear view. Shoot them all or they'll spot your muzzle flash and hit you.

Eventually dawn breaks and and you set off in search of Sergeant Elias, your platoon leader. Instead you meet Sergeant Barnes who tells you that Elias is dead. Later you see Elias being chased and shot by the Viet Cong. You realise that Elias's death is indirectly the fault of Barnes because he didn't aid Elias. A garbled message comes in over the radio, the area that you're in is about to be napalmed because of the high concentration of Viet Cong. You have two minutes'to get to a safe area. The compass will guide you there. Enemy soldiers fill the surrounding jungle and there are many paths that you can take, not all of them will get you to the safe area in time.

The foxhole lies before you in the final stage and Sergeant Barnes is in it. Barnes has decided that you know too much and opens fire. The airstrike is imminent and so you have no choice, but to blow Barnes out of the foxhole with a few well placed grenades.

Throughout the game a tune plays and it's one of the best pieces of music I've heard from the CPC for a long time. Sound effects are just machine gun fire. The graphics are disappointing and lack detail.

If you haven't got a 128K machine then the games a multi-loader, otherwise it's all loaded into memory at once. The first section is a bit tedious and you'll play a lot of games before you make it across the bridge. The major problem is that you get hit too easily and morale is soon plummeting. The difficulty is set just a little too high and medical kits are really needed before you get to the tunnel section where they first appear. That doesn't matter though because once you've got through the first section you'll find that the game has a lot going for it. **GBH**

FIRST DAY TARGET SCORE

Complete stage one of the game.

The Verdict

GRAPHICS 56%

- Not much detail in the graphics.
- Slow and jerky scrolling in the jungle.

SONICS 78%

- Marvellous continuous tune.
- Simple spot effects.

GRAB FACTOR 78%

- I'll get to the village in one piece, even if it kills me.
- The first stage is difficult and boring.

STAYING POWER 85%

- Six varied stages to play through.
- Just a little too hard to stay alive.

AA RATING 82%

- Some good old arcade action with plenty of foes to blow away.

MASTER GAME

CYBERNOID

Hewson, £9.99 cass, £14.99 disk, joystick or keys

Raffaele Cecco's past credits include outstanding games like *Exolon* and *Equinox*. His latest graphical extravaganza is in a similar vein with tricky puzzles to solve and difficult situations to get out of.



●The gold ball makes destruction easier

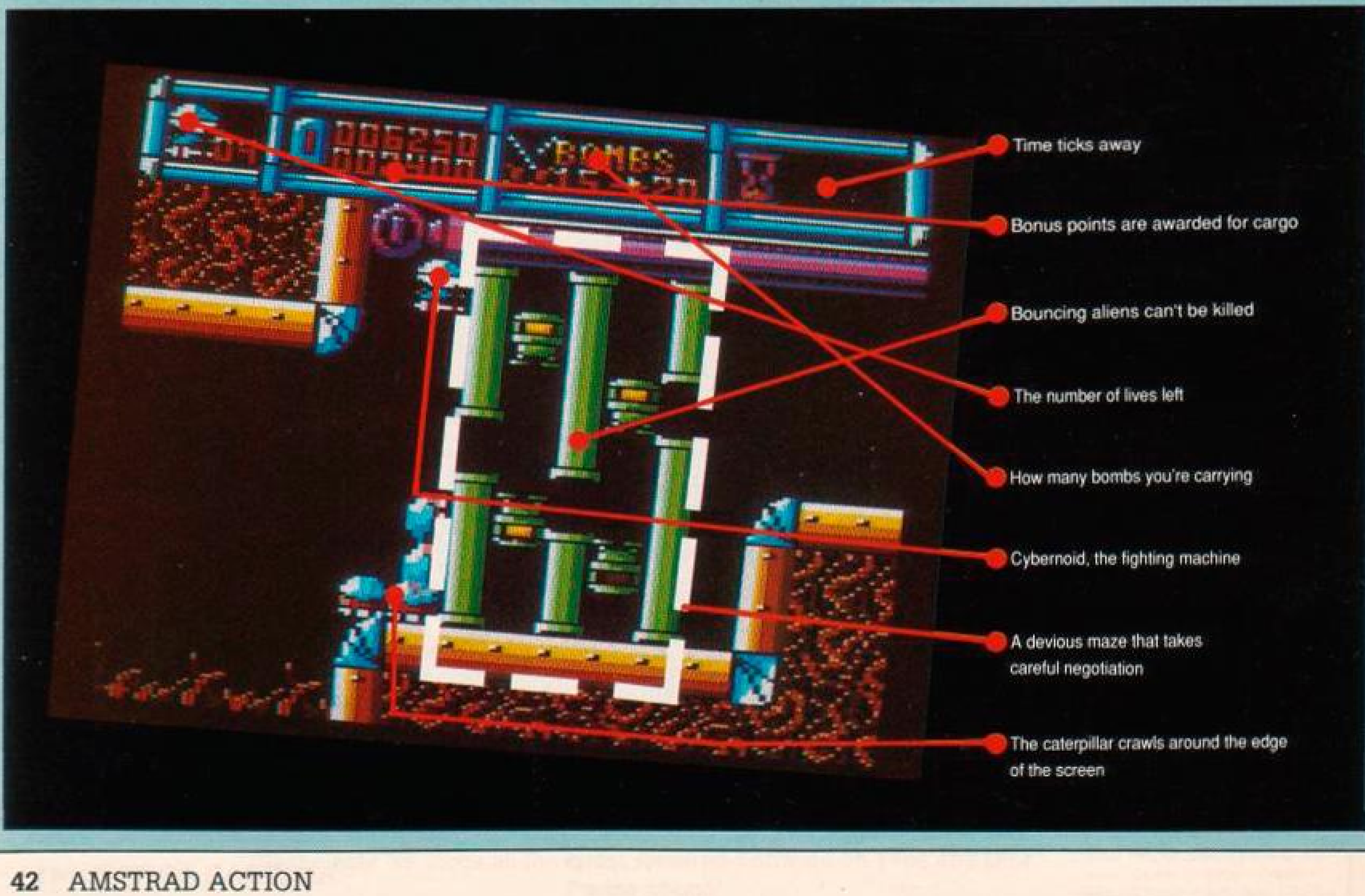


A horde of space pirates have stolen large quantities of cargo and you've been assigned to retrieve it. You control a space craft that's armed with a single forward firing laser and a load of bombs.

Across the top of the screen is panel that informs you of how many lives you have, how much cargo you've collected, number of bombs and time remaining. The rest of the screen shows a side on view of the playing area. It's a flick screen game with 60 different screens. On each screen there are various enemies that are definitely out to get you.

The aliens come in a several forms: pirate ships, large wasp nests, laser guns, missiles, pairs of aliens that bounce up and down and caterpillars. The pirate ships fly around randomly and are armed with laser weapons. If you destroy them they drop whatever they had in their hold, which could be cargo or weaponry. A massive bonus is obtained if you collect the required amount of cargo and reach the end of the level within the time limit.

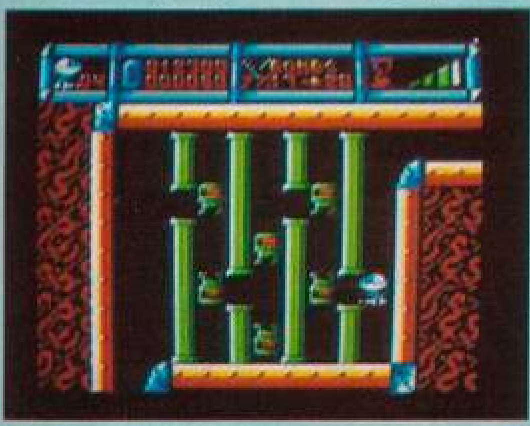
The wasps nest spits deadly green blobs at you that you must avoid. A well placed bomb will blow it apart. The missiles lift off when you pass over them and will destroy you unless you bomb or dodge them. The missiles can also be destroyed when they're on the ground. The pairs of aliens that move up and down are in narrow shafts that have small openings in them. Negotiating the shafts is not easy and since the aliens can't be destroyed a lot of lives can be lost getting through. On later screens there are a whole maze of shafts that take a lot of hard work to get through. The caterpillars walk around the screen clinging to





the surface. They can't be destroyed and so you have to avoid them. Laser guns fire energy bolts horizontally, neither the bolts nor the guns can be destroyed.

Initially your ship has little firepower, but other weapons can be picked up. The first weapon that you'll find is the large gold ball.



●Negotiating the maze of passages is tricky

Pick it up and watch it go, because its beautifully animated. It orbits around your ship, spinning in the direction that you're facing and it will destroy anything that a bomb can destroy by simply hitting it. There is also a gun like object that you can pick up and it sticks to the back of your ship giving you two-directional laser fire. The bombs that your ship carries are fired by holding down on the fire button. If you're descending then the bombs will fall downward and if you're going up they move in an upward arc.

As with any game by Raffaele Cecco the graphics are superb. They're large, bright and colourful with flicker free animation. A great tune plays throughout the game. The explosions sound and look very impressive.

Some of the screens in this have been designed by an incredibly devious mind. They're not impossible, but they do take a lot of pixel accurate positioning and split second timing to avoid death. There's plenty to think about and loads of aliens to blast. Large portions of the scenery can also be demolished and this adds to the destruction. Great fun to play with plenty of screens to keep you occupied for many long nights. **GBH**

SECOND OPINION

You can only marvel at the graphics and speed that Raffaele Cecco squeezes out of the CPC. The animation, explosions, use of colour and scenery are out of this world. Of course that isn't all there is to a game but it certainly makes an incredible impact. Once you get round to the action there's no let up. Every screen comes as a surprise, as all kinds of alien mayhem heads your way. For some this may be a bad point because it makes the game exceedingly tough, but for action freaks it's heaven sent.

There's tremendous satisfaction gained from cracking a screen that initially looked devastatingly difficult. Once you've done that there's the anticipation and sharp reflexes needed to cope with whatever comes next. This won't be everyone's cup of tea but you can still marvel at the graphics even if you don't get hooked by the action. **BW**

GREEN SCREEN VIEW

The graphics lose a lot of their appeal, but you'll have no problems seeing everything

FIRST DAY TARGET SCORE

Complete level one.

The Verdict

GRAPHICS 92%
- ☐ Superb animation and effects.
- ☐ Bright and colourful aliens and scenery.

SONICS 78%
- ☐ Foot-tapping continuous tune.
- ☐ Splendid explosions too.

GRAB FACTOR 94%
- ☐ Fast and furious action.
- ■ At first it may seem too difficult to cope with.

STAYING POWER 86%
- ☐ 60 screens to explore.
- ☐ Blasting and thinking are both needed to get far.

AA RATING 91%
- ☐ Plenty of action to keep you going for many long nights.



PIRATES

Microprose, £19.95 disk, 6128-only, joystick or keys

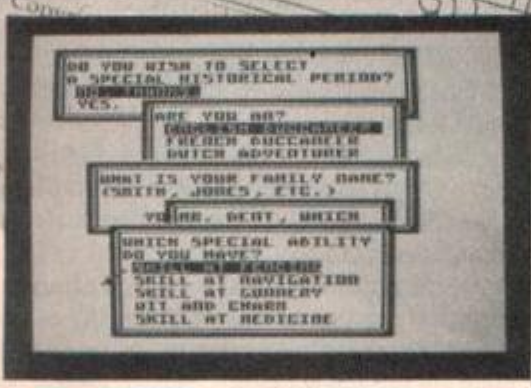
This is one of those rare games that will only run on a 6128, it won't run on a 464 or 664 with or without ram pack. Both sides of the disk are used to play the game.

Supplied with the disk is a long and detailed instruction manual and a map of Caribbean. There's a lot of information in the manual, but there's also a quick start section to get you into the swing of things. The map is essential if you're to travel the seas and plunder successfully.

There are three options presented to you as soon as play begins: start a new career, continue a game or command a famous expedition. When you start a new career you can choose your nationality and also which skill you want to be good at. The skills are: fencing, navigation, gunnery, medicine and wit-and-charm. The choice of skill can considerably alter how you do in the game. Your nationality can be any of the following: English, Dutch, French and Spanish. You can also choose a particular historical period too. These range from the Silver Empire in the 1560's to the Pirates Sunset in 1680. There are four difficulty levels that you play at: apprentice, journeyman, adventurer and swashbuckler. They range from easy to very difficult.

Once all of the start-up is over play begins properly with you becoming dissatisfied with work on a sugar plantation. You find a seaman and ask to join a ship. After answering a question concerning the treasure fleet or silver train you get to duel with the captain for command. If you win the battle of swords then you take over command.

You begin play in port where you can choose from a menu to visit the governor, a tavern, trade with a merchant, divide the plunder, check information or leave town. A visit to the governor or tavern provides you with useful information. Extra crew can be hired in the



●Which skill will you choose?

tavern too. Trading with a merchant will get you some cargo just in case you want to do some legitimate trading, but it's much more fun to be a pirate and sell the merchant your stolen cargo. Dividing the plunder comes into play when you want to go into temporary or permanent retirement. When you're ready set sail for the high seas and go and seek your fortune.

Once at sea you'll get messages from your lookout if he sees anything. You then have the option to approach or ignore it. If you do get close enough to a ship then you have a choice of sailing away, hailing for news or closing for battle. If you hail for news then you'll get information similar to that obtained from the tavern and this option is better with ships of your own nationality, you do want some safe harbours after all.

Close for battle with the enemy and the screen switches to a view of the two ships. At first you'll only be in cannon range, but they can be used to soften up your enemy. When you think they're ready then it's time to board the enemy vessel. The result of the battle is decided by a duel with the enemy captain. If you have more men then you're more likely to win the fight than if you have less. A captured ship can be plundered and sunk or you can keep it and sell it next time you reach port. Unfortunately a damaged ship will slow you down.

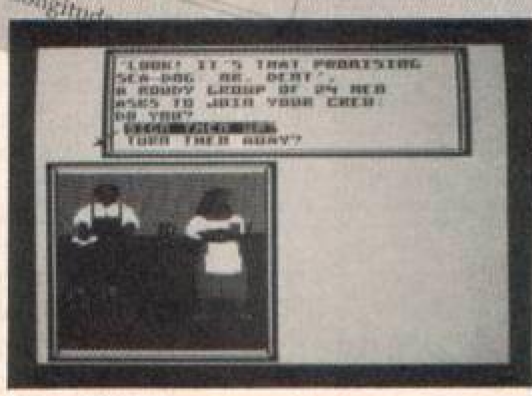
SECOND OPINION

There's a nice atmosphere about the game, from the superb packaging, through the excellent pictures to the gameplay itself. It's not what you would call instantly addictive, but it's the sort of game that you'll sit down with, read the booklet, start playing, get gradually more involved, and before you know it you've spent half the night playing it. Eventually you'll tire of a life on the ocean wave, but there's enough variety of tasks and challenges that it won't be for a long while. Shame about the price, but it just means you probably ought to try-before-you-buy just to make sure it's your kind of game.
BW

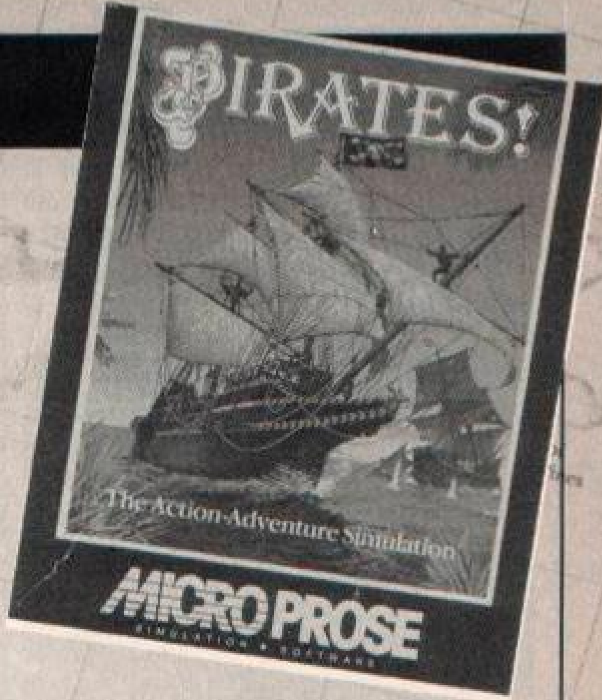
GREEN SCREEN VIEW

Everything is just as easy to see in green.

Ports can also be attacked and they often have lots of plunder. However, they are heavily defended and you may get severe ship damage. Ports can be stormed and the result is obtained in exactly the same way as a sea battle. All out land battles can also be fought. If you lose a battle at any time then you'll be incarcerated for a few months and then a



●A typical tavern scene



release will be negotiated. Hitting one of the many reefs will result in you being stranded on an island for a similar length of time. Play can continue for as long as you want, or until you become too old and sick to live the life of a pirate.

The graphics are chunky, but colourful. Some of the pictures of people are quite pretty. The sound effects are nothing special, but tunes do crop up at times and they are generally good.

Although this is not the greatest game in the world, it's fun to play. There are plenty of options to choose and it'll take a long time before you progress through the ranks. Unfortunately the price is going to put many people off. Before you go out and spend £20 on this one have a look at it. **GBH**

FIRST DAY TARGET SCORE
Capture an enemy port.

The Verdict

GRAPHICS 72%
- □ Lots of pictures.
- ■ Sailing graphics are chunky.

SONICS 57%
- □ Atmospheric tunes play occasionally.
- ■ Poor sound effects.

GRAB FACTOR 78%
- □ Very well packaged with a map and detailed instruction book.
- □ Piracy on the high seas is challenging and fun.

STAYING POWER 86%
- □ A wide variety of options keep you busy.
- □ Progressing through the ranks is a long term objective.

AA RATING 76%
- □ Excellent swashbuckling stuff...
- ■ but expensive.

SIDE ARMS

Go, £9.99 cass, £14.99 disk, joystick or keys

The Earth and it's population is yet again in danger of extermination. You must save the planet from destruction at the hands of the tyrannical Bozon by fighting your way into the heart of his empire and defeating him.

SECOND OPINION

What can you say about a perfectly reasonable shoot-em-up? It's undemanding, fun for a while and much like many others of the genre. Graphically it's quite impressive, apart from the lack of detailed scenery. It should appeal to fans of the arcade game, but doesn't offer anything to set my pulse racing. **BW**

GREEN SCREEN VIEW

Just as easy to play in green.

At the bottom of the screen is a panel that shows your speed and the five different types of weapon that you can use. There's a lives and score indicator at the top. The rest of the screen shows a side-on view of your space suited character, as he travels over the horizontally scrolling landscape.

The landscape scrolls slowly from the right and all you have to do to go to the next stage of the game is stay alive until you reach the end. Aliens charge towards you in a variety of forms: some come at you kamikaze style, others drop in and shoot at you and then there are the worms that follow you around.

Extra weapons are obtained from objects that appear on screen after you've killed certain aliens. There are seven different objects: speed up, slow down, 3 way shot, mega bazooka launcher, auto, bit and multi-shot. The speed up and slow down alter your rate of fire, 3 way shot produces 3 blobs that take different trajectories and the bazooka produces a thick powerful laser bolt. Auto is the only weapon that fires repeatedly without you having to bash away at the fire button. Bit is up to three blobs orbiting around you, each one fires a laser bolt. The multiple shot capability gets better each time you collect one of the appropriate objects.

A jolly tune plays continuously and the sound effects are adequate. The scrolling is smooth, but there is flicker in the graphics.

It's good fun to play as a simple shoot-em-up, but there's little variation. The end of level aliens are very easy to defeat, especially if you have auto or bit. Plenty to blast, but nothing you haven't seen before. **GBH**

FIRST DAY TARGET SCORE

Complete level one.

The Verdict

GRAPHICS 63%
- □ Smooth horizontal scrolling.
- ■ Flickery graphics.

SONICS 74%
- □ Excellent tune plays throughout.
- ■ Simple sound effects.

GRAB FACTOR 73%
- □ Multiple weapons are fun.
- ■ Infuriating to die for no apparent reason.

STAYING POWER 64%
- □ Plenty of levels to go through...
- ■ but not much variation.

AA RATING 68%
- ■ More variety would have produced a much better game.



●The three blobs of bit give you super fire power

I BALL II

Firebird, £1.99 cass, joystick or keys

The Ball race are an intelligent and highly developed race. There is however one thing that annoys them, they know little of their past. Their evolution and ancestry are mysteries to them. They know where they can get the information though, from the old mines. Ancient artifacts lie there that could fill in the missing gaps in their knowledge.

Your ball can roll along the ground or jump up, but it's a real handful to control accurately. You have volunteered to search the mines for artifacts. The mines are not deserted though. There are things that try to kill you and there's also the danger of the radioactivity. The mines are blocked off and to get through to the next you need a key. The keys are positioned in hard to get to places and so are the exits.

SECOND OPINION

This is an excellent challenge for control freaks, because getting the best out of the ball takes a lot of hard graft. This also means it's screamingly frustrating and it will take you ages to get anywhere with it. I enjoyed it, but don't have any fragile objects of furniture or cups of coffee nearby while playing it. **BW**

GREEN SCREEN VIEW

Just as easy to see everything in green.

The hostile mine inhabitants can be destroyed by a bolt that you can spit forth. There are also smart bombs that kill everything on screen, but these have to be found first. Other objects can be found in the mines that do good or bad things to the ball. "Muddle" mixes all of the controls up so that you have to think very carefully before you make vhe next move. "Time warp" slows everything down so that the inhabitants are easier to avoid and "down to earth" deactivates bouncing objects.

The levels are grouped together in fives, after which you receive an artifact. The order in which the levels are done is randomly selected. Extra lives are gained after you've collected four life stones.

The sprites are all single coloured, but they are well animated. There's also some digitised speech that's just about understandable. Sound effects are poor.

Frustration is what this game is all about, control of the ball is really difficult. All of the levels are possible – honestly, but some of them are extremely tough. **GBH**

FIRST DAY TARGET SCORE

Collect one artifact.

The Verdict

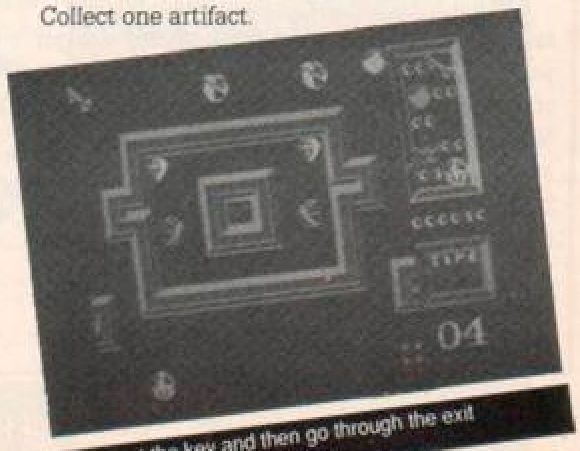
GRAPHICS 45%
- □ Sprites are well animated.
- ■ Colour is badly used.

SONICS 43%
- □ Digitised speech.
- ■ Beeps and pings.

GRAB FACTOR 67%
- □ It has a frustrating, addictive quality that makes you want just one more go.
- ■ Initial confusion and control difficulty may put you off.

STAYING POWER 67%
- □ Plenty of levels to complete.
- ■ Some screens are just too difficult.

AA RATING 70%
- □ At budget price it's well worth a look.



●Collect the key and then go through the exit

CHAMPIONSHIP SPRINT

Activision, £9.99 cass, £14.99 disk, joystick or keys

Super Sprint was reviewed back in issue 27, now there's a follow up that has eight tracks to complete and a course designer for when you've exhausted all of those.

The screen shows an overhead view of the track with a lap counter for each car in one of the four corners. Next to that is a spanner counter. The races are four laps in length.

Each of the tracks has one or more of the following hazards that you must avoid: oil slicks, pools of water, gravel, whirlwinds, jumps, and bumping into the track edges. Failing a jump causes the car to explode, everything else either sends you in a spin or stops you dead in your tracks.

SECOND OPINION

I'm a bit puzzled as to why this wasn't released in stead of Super Sprint. It offers nothing new except the course designer, which for a simple game like this doesn't add that much potential. Certainly not worth getting if you've got the original but still worth a look for newcomers. **BW**

GREEN SCREEN VIEW

No problems playing in green.

To continue onto the next race circuit you have to beat the computer drones. They don't move particularly fast, but they never collide with the boundaries of the track or fail to make a jump

During the race spanners and points bonuses can be collected by simply driving over them. The spanners are used at the end of a race to customise your car. You either give it better traction, a higher top speed, greater acceleration or just have bonus points.



●The editor screen with a partially designed track

There have been no changes made to the graphics – they're as mediocre as before. The sound effects are the same as the feeble engine noises in the previous game.

The gameplay is identical and so the only thing that makes this any different from *Super Sprint* is the course designer. It's easy to use and does add to the staying power of the game. If you already have *Super Sprint* then unless you were absolutely hooked on the game you might as well save your money. **GBH**

FIRST DAY TARGET SCORE

Complete 6 tracks.

The Verdict

GRAPHICS 67%

- □ Good use of menus on the editor screen.
- ■ Collision detection is still as poor as in *Super Sprint*.

SONICS 22%

- ■ The feeble of hum of an engine.

GRAB FACTOR 64%

- □ Two player game makes it more fun.
- □ Designing tracks adds to the enjoyment.

STAYING POWER 72%

- □ Track editor means that you've as many tracks as you can think of.
- ■ The shape of the track changes, but the gameplay doesn't.

AA RATING 66%

- ■ If you've got *Super Sprint* then it has little to offer.

PLASMATRON

CRL, £8.95 cass, £14.95 disk, joystick or keys

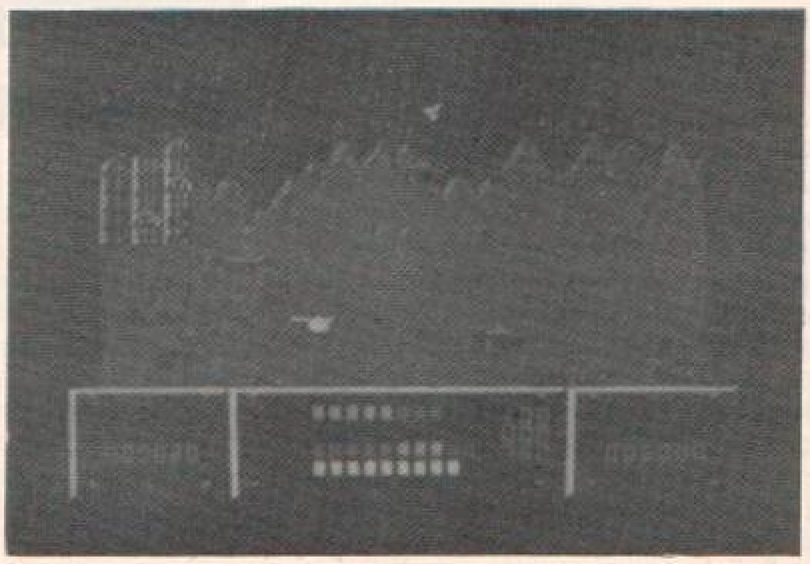
You are captain Ford on a reconnaissance mission to the planet Loughton 2. Loughton 2 is a deserted empire colony that has been occupied by aliens. Can you identify the nature of the aliens, or will you die in the attempt?

GREEN SCREEN VIEW

It's just as visible in green as in colour, unfortunately.

The screen is divided into two areas: a horizontally scrolling play area and a status panel at the foot of the screen. The status panel shows your shield energy, amount of damage inflicted on your ship, time until you reach your destination and laser power. The rest of the screen scrolls at three different speeds.

Basically this is a shoot-em-up. Aliens swarm towards you and it's a matter of kill or be killed. Some aliens ram into you and others shoot at you. All can be dispatched with a well aimed laser bolt. There's very little else to it.



●Shoot the flickery aliens

The horizontal scrolling is very jerky and gives absolutely no impression of speed. The sprite movement is cumbersome and they flicker badly. Sound is appalling too and there are no tunes. Let's hope this joins the dinosaurs and the dodo – soon. **GBH**

FIRST DAY TARGET SCORE

2,500 points

The Verdict

GRAPHICS 18%

- ■ Bad scrolling.
- ■ The sprites are flickery too.

SONICS 23%

- ■ Uninspiring effects.

GRAB FACTOR 23%

- □ Shoot-em-up freaks might get something out of it.
- ■ Very old game format.

STAYING POWER 15%

- ■ Not enough variety in the aliens.
- ■ Nothing at all to give you brain strain.

AA RATING 17%

- ■ It would be overpriced as a budget game.

BAD CAT

US Gold, £9.99 cass, £14.99 disk, joystick or keys

The feline olympics are about to begin in Los Angeles. Are you a bad enough cat to reign supreme, after the series of demanding events that lie before you? Up to four people can compete against each other.

SECOND OPINION

It's a bit like a cute Combat School for cats. Each screen seems very straightforward, but it should appeal to those with a penchant for timing problems and platform jumping. The relative ease with which most of the game can be completed is a drawback, but that fact combined with the delightful graphics means it may appeal to youngsters. **BW**

GREEN SCREEN VIEW

No problems with any of the stages.

At the bottom of the screen is a map of the level that you're on. To the right is a clock that counts down the time remaining before the end of the level. The rest of the screen shows the location that you're in.

There are four stages to the game: the city park, the arena, the sewer and the pub. Between each stage there's an interlude. In the park you have an obstacle course to negotiate. You have to crawl, jump, swing, cross monkey bars and walk on balls in an attempt to reach the end of the stage. The penultimate screen has a key that you need to start a motorbike on the final screen.

Stage two is the arena where you stand on a moving platform and jump up to hit symbols that move across the top of the screen. In the sewer there are various obstacles that must be negotiated, they're similar to those found in the park. Watch out for the rats and crocodiles. In the final stage you try to hit a bulldog on the foot with a bowling ball, while avoiding the balls that he hurls at you. If hit you must drink a glass of beer. If you drink more beer than the dog then you don't get the bonus points.

Sound effects are simple but effective and there are no tunes. The graphics are bright and colourful with well animated characters.

My major criticism of this game is that it's too easy. The obstacles are no problem once you've worked out how to complete it and that means that you only have high scores to beat. There are some humorous touches that make it fun, but it doesn't have enough there to make it last. **GBH**

FIRST DAY TARGET SCORE

15,000 points

The Verdict

GRAPHICS 78%
- □ Large and well animated characters.
- □ Bright and colourful graphics.

SONICS 43%
- □ Reasonable sound effects.
- ■ No tunes.

GRAB FACTOR 74%
- □ The option for several players adds to the fun.
- □ Joystick wagglers will find something to keep them occupied.

STAYING POWER 61%
- □ Four events to go through.
- ■ Take away the multi-player and there's little left.

AA RATING 65%
- ■ Being a bad cat is just a bit too easy



Walking on the ball.

BLOOD VALLEY

Gremlin, £9.99 cass, £14.99 disk, joystick or keys

This is not the first time that fighting fantasy books have been turned into computer games. *Way of the Tiger*, also by Gremlin, came out over two years ago. Fighting fantasy books usually pit a single player against a random assortment of foes, using numbered paragraphs to determine the outcome of the players actions. The Duelmaster series, of which *Blood Valley* is a part, uses a pair of books, one for each of the two players needed. In the computer game you have a one or two player option.

The Archveult is an evil reptilian being that loves blood sports. His favourite sport is hunting slaves as they do their best to escape the Valley of Gad. The Archveult does not hunt alone, he has three allies who also lust for blood, his son the Demiveult, Ka-riim and Kritos Bloodheart. In the two player game one of you is the Archveult and his allies and the other is the slave. You are the slave in the one player game. There are three slaves to choose from: a barbarian, thief or priest. Each have their own strengths and weaknesses. They also have some tasks to complete before they leave the valley.

The screen is split into two halves which show a view of the valley for each player. The bottom half shows the characters objectives in the solo game. A status panel for the slave is displayed on the right of the screen.

Here is a good example of bad graphics. The horizontal scrolling is jerky and the animation is appalling. There's a title tune that's alright and an average tune plays continuously in the game. There are no sound effects.

The gameplay is boring with very little to do. You wander around trying to complete your objectives and fight off the inhabitants of the valley. The previous fighting fantasy game was much better. **GBH**

FIRST DAY TARGET SCORE

Complete one of your objectives.



A split screen view in the two player game

GREEN SCREEN VIEW

No problems seeing everything in green.

The Verdict

GRAPHICS 43%
- ■ Jerky horizontal scrolling.
- ■ Lousy animation.

SONICS 63%
- □ Continuous tune plays throughout the game.

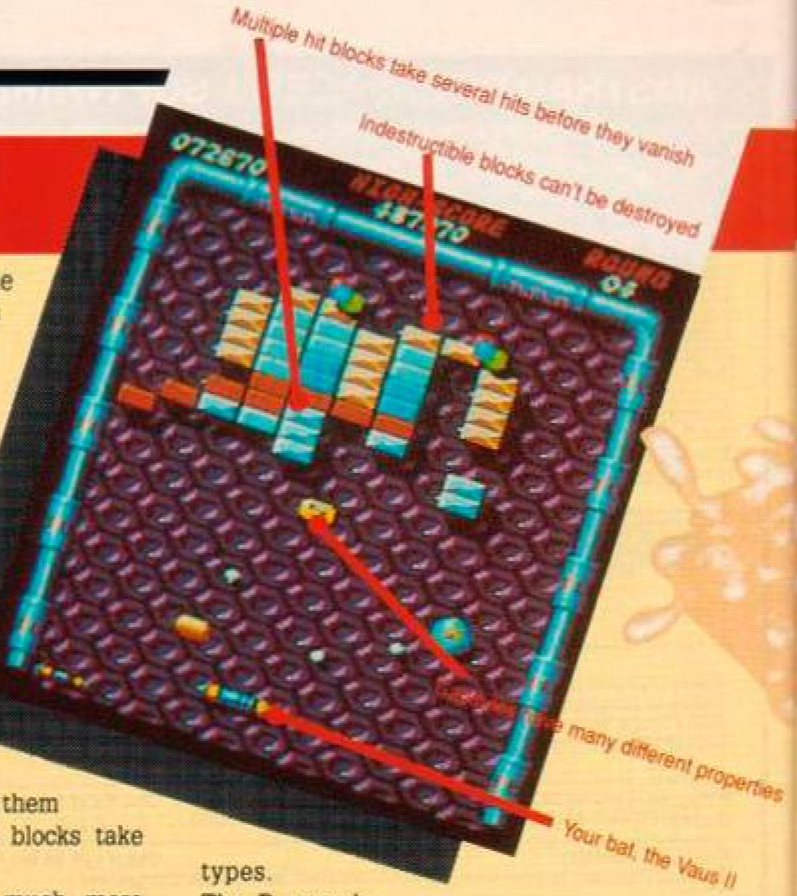
GRAB FACTOR 41%
- □ It's alright as a two player game.
- ■ One player game is just boring.

STAYING POWER 33%
- ■ Very little to do, just chop people and collect stuff.
- ■ Too easy to win.

AA RATING 35%
- ■ If you're expecting a role playing game then you'll be sadly disappointed.

ARKANOID – REVENGE OF DOH

Imagine, £8.95 cass, £14.95 disk, joystick or keys



Who is this Doh character you're asking yourself? Apparently he's the poor unfortunate that got batted and bounced into submission in the original game. It's still basically a breakout clone, but even more features have been added.

In the Arkanoid Space Wars you controlled the Vaus spacecraft in an attempt to break down walls. 40,000 years have passed and now a huge alien spaceship has entered the universe. On-board is the evil Doh, thought destroyed in the Arkanoid Space Wars. Vaus II is launched to counter the alien threat.

The playing area shows your bat at the bottom of the screen and the wall that must be destroyed above you. Your number of lives and score are also shown on-screen. The walls are made up of several types of blocks: normal, multiple hit, regenerating, moving and indestructible. Normal blocks only take one hit to make them disappear and the multiple hit blocks take several before they're destroyed.

Regenerating blocks are much more troublesome because they take several hits before they vanish and then they re-appear a few seconds later. Indestructible blocks are never destroyed, well almost never – more of that later.

When the blocks are destroyed a capsule frequently appears and can be collected by catching them with the bat. There are all the old capsules from *Arkanoid* and some new ones too. Written on the side of each capsule is a letter that tells you what it does. B, C, D, E, G, L, M, N, P, R, S and T are the capsule types.

The B capsule allows the bat to break through to the next level without clearing away all of the blocks. C sticks the ball to the bat instead of bouncing it off and D disrupts the ball into five parts that makes clearing blocks away easier and faster.

The bat can be expanded to double its width by collecting the E capsule and the G capsule creates a ghost image of the bat that trails behind you deflecting the balls as if it was a normal bat. The bat can be armed with a laser by collecting the L capsule and you

SECOND OPINION

There is something about this type of game that will keep me glued to the computer. No matter how many versions of the Breakout classic appear, each has a novel twist; something to keep me hooked. This is especially true of Arkanoid II. Bats and balls with varying properties, large number of screens, different paths to the nefarious Doh and – most importantly of all – addictivness. Just one complaint: the ball occasionlly gets stuck which ruins an otherwise perfect game. **RpM**

GREEN SCREEN VIEW

The capsules are a little tricky to identify in green, but otherwise everything is easy to see.

NIGEL MANSELL'S GRAND PRIX

Martech, £9.99 cass, £14.99 disk, joystick or keys



Now you can squeeze yourself into the driving seat of a formula one racing car and get ready to race around the worlds most tortuous tracks in a bid to become world champion. There are eight other drivers in the running, all computer controlled, and you'll need to drive fast and efficiently to beat them.

The screen is split into two areas: a control panel and a 3D view of the track that you're currently on. The control panel is considerably more enhanced than you normally get in a racing game. Gone is the steering wheel that usually occupies the majority of the screen and in its place are many extra instruments. In the centre of the panel is a rev counter that goes up to to 12,000 RPM, after that it goes into the red and you put excess strain on the engine. On either side of the rev counter are gauges that show how much fuel you have left, oil temperature and pressure, water temp, turbo temp and turbo boost.

A grand prix race is done on one tank of fuel and so you have to take care that you don't run out. The turbo boost makes your car travel considerably faster, but it also eats up the fuel rapidly and you have to watch that the turbo doesn't overheat. A gear stick is represented to the lower right and this goes from first to sixth gear. If you're over revving then your gearbox could fail and that's you out of another race.

There's also an on-board computer that's linked to the pit crew. It shows speed, last lap time, average speed on the last lap, best lap time, fuel level, fuel consumption, range on fuel and distance to the finish line. The ones to watch are those concerned with the fuel consumption. If you use turbo too much then you won't have enough fuel to reach the finish line.

Messages from the pits are also displayed in a small window on the display. The messages are things like recommendations for tyre changes, information about your position in the race and whether or not anyone else has pulled into the pits. On either side of the control panel are wing mirrors that show you if there are any cars behind you.

Before you begin a grand prix season of 15 races you choose whether to do 5, 10, 20 or the real life number of laps in each of the grand prix's – anything from 43 to 82 laps. The first track is then loaded in and you have a choice of practice or racing. Practice is a good idea to get you used to the track and then you can go for the race itself. Before the race begins you need to qualify for it. You first have a warm up lap and then three qualifying laps in which you must beat the qualifying time. The faster your qualifying time the further up the field you'll be at the start of the race. A really fast time and you'll get pole position.

SECOND OPINION

At first I wasn't very impressed but as soon as you stop trying to take every bend at full tilt it becomes much more enjoyable. Learning the tracks and getting into the rhythm of driving is the initial task. Then as familiarity grows you can take on longer races and really get to grips with the computer opponents. Not that great on the graphics side but makes up for it in long term challenge. **BW**

GREEN SCREEN VIEW

Playing in green is just as easy as it is in colour.

AA RAVE

can then blast away at the blocks. Another really useful capsule is the N which splits the ball into three parts in a similar way to the D capsule. The difference is that when you miss a ball with the bat it re-appears again, unless you miss all three simultaneously, in which case a life is lost. Bonus lives are given if you collect the P capsule and the ball is slowed down if you collect the S. T splits the bat into two, but there's a hole in the middle of the two that the ball can slip through if you're not careful.

The M capsule makes the ball pass through the blocks destroying them as it goes without being deflected in any way. This even destroys the otherwise indestructible blocks but still bounces off aliens. The most useless capsule is the R because it shrinks the bat and makes it much more difficult to hit the ball. Finally there's the special capsule that does one of two things: give you an auto firing laser bat or splits the ball into three and makes them behave as a combination of the N and M capsules – devastating.

There are loads of screens to go through and some of them are incredibly difficult. In *Arkanoid* you move to the next screen when the one that you're on is completed, but in this you get a choice. Two doorways open and you choose left or right, the choice affects which screen you go to next. The final screen in *Arkanoid* has an alien that takes lots of hits before he's destroyed. An alien appears on screen 17 in the sequel and who knows what lies on the final screen? Not me that's for sure.

Sound is a little better in this than in *Arkanoid* with nicer tunes and effects. The graphics are simple and colourful with no problems identifying capsules.

The addictiveness of *Arkanoid* is still present and the extra features that have been added make the game more fun. Control of the bat is a little tricky at times because the ball often moves too fast for the bat to reach it. Collision detection is poor and sometimes the ball appears to travel straight through the bat.

There are some really irritating bugs in the game that get it stuck in a loop.The ball sometimes gets trapped between indestructible blocks and since there's no way to quit the screen or even the game, you can end up having to re-load the game. Getting to a screen well into the game and this happening is very frustrating. Sometimes a mutant block appears that you have to destroy, but for some reason can't be destroyed and again you have no choice other than to lose all your lives. It's a very addictive and frustrating game that is unfortunately occasionally frustrating for the wrong reasons. If you loved the original you'll go wild over this. **GBH**

FIRST DAY TARGET SCORE
100,000 points

The Verdict

GRAPHICS 70%
- □ Colour's used very well.
- ■ Just simple blocks and balls.

SONICS 62%
- □ Nice tunes.
- ■ Uninspiring spot effects.

GRAB FACTOR 87%
- □ Instantly addictive.
- ■ Ok, so there's not much to think about.

STAYING POWER 76%
- □ Lots of screens to play through.
- ■ If the ball gets trapped it's very annoying.

AA RATING 83%
- □ An even better game than *Arkanoid*.
- ■ Irritating bugs spoil it a little.

The race duration depends on how many laps you chose, a 5 lap race takes under 10 minutes, but a full grand prix takes over an hour. After every race you get an option to save the game and if you're doing full length races this is going to be an essential.

Sound is little more than an engine hum and sometimes even that disappears for no apparent reason. The control panel is clear and easy to read. The 3D scrolling graphics are done simply, but do give the illusion of speed.

Take away all the frills and this is just another racing game. The difference is that rather than going full speed around the track in order to get to the end of the stage, you've got a long term objective to finish a race and keep the car in one piece. Pit stops are also important, do you go in and change the tyres, losing valuable seconds, or risk it and carry on racing to keep that lead? A reasonably realistic and flexible game that provides plenty of long term challenge. **GBH**

FIRST DAY TARGET SCORE
Win a 5 lap race.



The Verdict

GRAPHICS 64%
- □ Detailed control panel is easy to read.
- □ Smooth 3D graphics give an illusion of speed.

SONICS 19%
- ■ An engine hum and an occasional crash sound.

GRAB FACTOR 68%
- □ Five lap races introduce you to the game.
- ■ Initially driving seems lacking in skill and unrealistic.

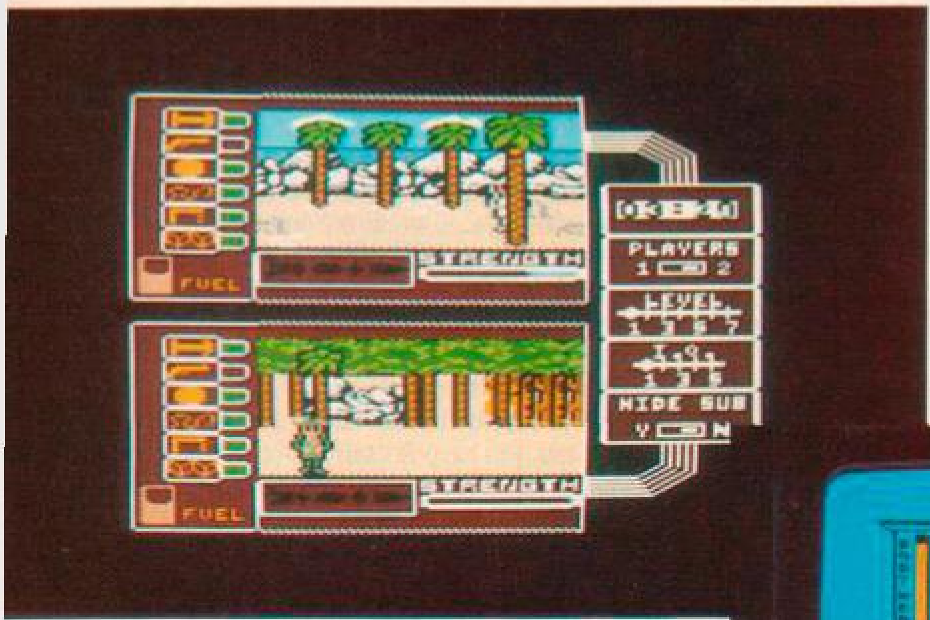
STAYING POWER 78%
- □ After playing for a while you'll realise that there is a large amount of skill needed to do well in a race.
- □ 15 tracks and varying race lengths make for a long term objective.

AA RATING 75%
- □ A fun racing game that mixes well the elements of strategy and racing.

SPY VS SPY TRILOGY

Databyte, £9.95 cass, £14.95 disk, joystick or keys

The Black Spy and White Spy have been fighting it out in the pages of MAD for a long time. They first made the transition to computer over two years ago in the game *Spy vs Spy*. Two sequels to the game were done, but they never appeared on the CPC. Now they are available as a trilogy. The games can be played by one or two players.



●The Island Caper, hanging around in a snare is not fun

Spy vs Spy

This was a *Rave* review in issue 3. It's set in an embassy where you have to collect a brief case, some money, a passport, a key and the secret plans. The objects are found in and around the furniture within the embassy. There is only one of each object and so you must do battle with your opponent for them. There are two ways to do this, good old fashioned beating around the head with a club or laying traps.

> **GREEN SCREEN VIEW**
> *You'll have no problems spotting the objects in green.*

Traps are accessed via the Trapulator and come in five varieties: bombs, springs, water buckets, guns and a time bomb. A double click on the fire button puts you in trap mode and from there you can choose which of the five to choose. A map of the embassy can also be displayed from the Trapulator.

Bombs and springs can be positioned on furniture so that they go off when next touched. Bombs blow up the spy and springs throw him across the room into the wall. The water bucket and gun are fitted to doors. A bucket of water electrifies your opponent and the gun, attached to a string, shoots him. The time bomb ticks away the seconds and goes off killing anyone in the room, including you if you're foolish enough to hang around. When a spy is killed he grows a pair of wings and flies off the screen angelically – surprising they don't head downward really.

Once all five of the objects have been collected you just have to find the exit to the airport, go through it and your plane takes off leaving the other spy to face his superiors.

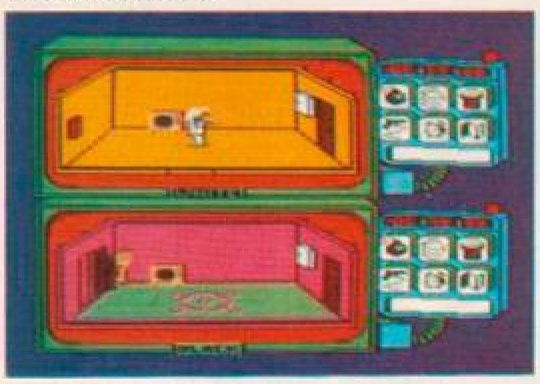
The Island Caper

The major difference between this and *Spy vs Spy* is that rather than it being a flick screen game it scrolls when you move left or right. The Trapulator is still there with a new selection of traps to use: snares, open pits, punji pits, napalm and coconut bombs. Snares are attached to trees and the unsuspecting victim is turned upside down to dangle for a short while. Open pits can be dug with a spade and if you then take a stake to the pit you can make a punji pit. The napalm temporarily cremates the spy and the coconut bomb needs to be filled with gasoline from a wrecked aircraft. There's also a gun that you can use to shoot the other spy, if you can find it.



●Arctic Antics, the polar bear won't let you in the silo without all the objects

Watch out as you wander around the island because there's quicksand lurking, to swallow up the unwary agent. The waters around the island are dangerous too, due to the sharks that roam hungrily.



Your mission is to recover the three parts of the XJ4.5 missile and make your way to the submarine before the volcano on the island erupts killing everyone. The sub then sails away from the island leaving the other spy to his doom.

AA RAVE

Arctic Antics

The spies last mission is set in the frozen wastes of the arctic. Your task this time is to obtain a gyroscope, punch card, fuel canister and a large briefcase. The club combat has gone and been replaced by something that's much more fun, snowball fights.

The traps are still there and work in a similar way to the other two games. The traps are: hole-in-the-ice-trick, booby trapped icicles, ice water buckets and TNT. The hole-in-the-ice-trick causes your opponent to drop into the frozen waters, the icicles fall on the head of the next person to pass under it, ice water makes you slip and the TNT blows you up when the plunger on the detonator is depressed.

Graphically each game is very similar and the spies are identical. The scrolling in the last two games is smooth, but it does slow down a little when both spies are in the same location. *The Island Caper* has a continuous tune playing and *Arctic Antics* has a great title tune.

As individual games they would be overpriced, but as a trilogy they're great value for money. Setting traps is still as much fun as ever and the multiple skill levels and map sizes makes the games more demanding. If you enjoyed *Spy vs Spy* then you'll thoroughly enjoy this compilation. **GBH**

FIRST DAY TARGET SCORE
Win each game on level three.

The Verdict

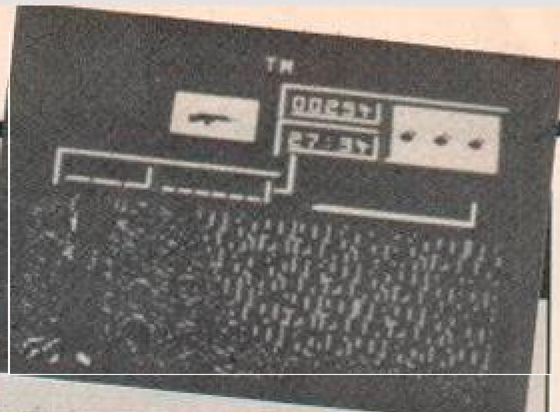
GRAPHICS 65%
- Chunky, but colourful graphics.
- Great mission complete sequences.

SONICS 69%
- The tune in *Arctic Antics* is brilliant.
- Sound effects are a little disappointing.

GRAB FACTOR 76%
- Once you get over the initial confusion with the Trapulator you'll be hooked.
- The three games are very similar.

STAYING POWER 82%
- Three games for the price of one.
- Lots of difficulty levels.

AA RATING 81%
- Fun to play, especially the snowball fights, stick fights, fights, more fights, etc, etc...


●Don't get caught in the triangle

PREDATOR
Activision, £9.99 cass, £14.99 disk, joystick or keys

The game of the movie has arrived on a monitor near you. It features the muscle bound hero of the film as he tries to escape death at the hands of an alien being.

You've been sent into the jungle to rescue the crew of a helicopter and the three diplomats on board. The jungle is filled with guerilla forces that pose a threat to you and the rest of the commando unit. Not forgetting of course the alien threat of the Predator.

Before play begins you get to see all of the commando unit climb out of the helicopter. It's alright the first time, but since it happens everytime you restart it really does get annoying. You're presented with a view of the jungle that scrolls horizontally. Above this is a panel that indicates how much ammunition you have, your score and your state of health.

Initially you have a machine gun and a few hand grenades, but other weapons can be picked up as you go along. The game is split into levels, each one is loaded separately, even on 128K machines. The levels are completed by reaching the right hand end of the jungle in one piece. The guerillas and the occasional flock of vultures don't help you to achieve this end.

The ultimate threat is of course the alien. You know when he is tracking you because the screen changes colour to give an infra-red view – the alien sees in infra-red wavelengths. Don't let the triangle touch you because that's the view through his sights and he'll blast you.

The horizontal scrolling is smooth and the animation is slow, but flicker free. There's a terrible title tune and the in-game effects are little better.

Tedious is a word that comes to mind with this game, shoot the guerillas and avoid the alien, but what more is there to do? Not-a-lot. **GBH**

SECOND OPINION

I haven't seen the film but it couldn't possibly be worse than the game. All you do is run along shooting...errrrrrm...well, that's it really. The graphics are pretty murky and the whole thing fails to convey any atmosphere. It's bound to sell well, but that still won't turn it into a good game. **BW**

GREEN SCREEN VIEW

The vultures merge into the background a bit, but everything else is visible.

FIRST DAY TARGET SCORE
Complete level one.

The Verdict

GRAPHICS **61%**
- □ The horizontal scrolling in smooth.
- ■ Chunky graphics.

SONICS **28%**
- ■ Terrible title tune.
- ■ Sound effects aren't much better.

GRAB FACTOR **39%**
- ■ Having to re-load the first level everytime the game ends is annoying.
- ■ Irritating having to wait for the commandos to disembark from the helicopter.

STAYING POWER **46%**
- □ Lots of levels to go through.
- ■ Lack of replacement ammunition makes it too easy to die.

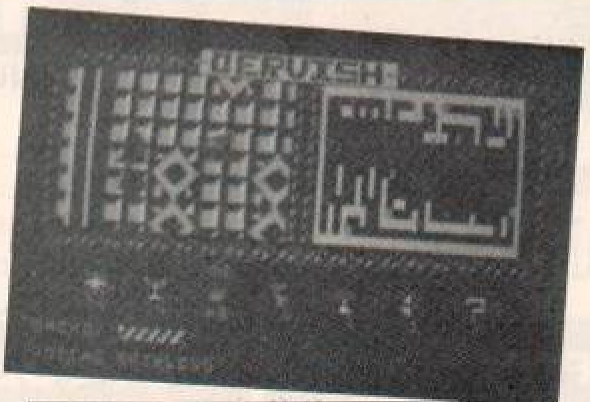
AA RATING **43%**
- ■ Fans of the film will be disappointed.

DERVISH
Powerhouse, £1.99 cass, joystick or keys

Magic and mysticism feature strongly in the life of the Dervish. Are you made of the right stuff to travel through the eight levels of awareness to reach the Upward Path?

Players of *Druid* may notice a similarity in the format of the two games. There is the same four way scrolling of the playing area and across the bottom of the screen is a row of icons. These represent the different types of spells that you can cast. There's an energy bar and your rating below the spells.

The area that you're wandering around is filled with lots of nice energy draining monsters that are out to kill you. There are three different types of energy that you can hurl at them: light, brimstone and water. The different creatures are killed more easily by a particular bolt type. There is also an invisibility spell and a smart bomb spell. Keys can also be collected and used to open doors.



●The Dervish stands below a chest

When you pass over diamond like objects, a screen appears with a cursor moving at random below the icons. You press fire to select when it's under the icon that you want. A list of objects that you're carrying can be displayed. There are four to collect: autofire, stabiliser, detector and shield. An unusual option is the choice of whether to play the game or explore. The explore option lets you move around freely without dying when you run out energy, but you can't score.

The graphics are bright and colourful with smooth four way scrolling. Sound effects are of average quality and the title tune is just about tolerable. If you want originality then you might as well look elsewhere, but if you enjoyed *Druid* then this should keep you occupied. **GBH**

SECOND OPINION

A pretty good effort this. It's obviously a Druid rip-off, but it's well done and budget priced. Those two factors make it a very worthwhile game. The graphics aren't up to the Druid standard but the gameplay is very similar. **BW**

GREEN SCREEN VIEW

Some of the sprites merge with the background.

FIRST DAY TARGET SCORE
Achieve the rank of Spindizzy.

The Verdict

GRAPHICS **64%**
- □ Colourful sprites.
- □ Smooth four way scrolling.

SONICS **56%**
- ■ Sound effects are average.

GRAB FACTOR **64%**
- □ Finding spells and frying monsters is good clean fun.
- ■ Originality zero.

STAYING POWER **58%**
- □ 8 levels of awareness to progress through.
- ■ Just a matter of killing monsters and staying alive.

AA RATING **66%**
- □ Well worth the budget price.

BRAINSTORM

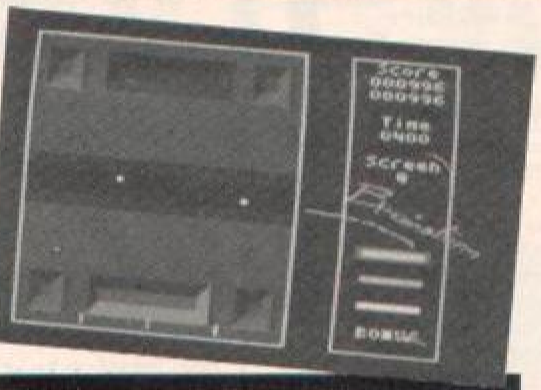
Firebird, £1.99 cass, joystick or keys

Take a very simple concept, add simple graphics and create a game that will drive you insane. There's no scenario to get to grips with, it's just a matter of having your mind warped.

The screen layout is very simple: a playing area with various coloured areas is to the right and on the left is a status panel. The panel has three coloured bars, a bonus bar, a timer that counts down and your score.

There are five colours that are used to make up the playing area. Each of the colours has different properties, when the ball that travels around the screen passes over them. Blue and black have no effect, red increases your score, magenta decreases your score and green makes the ball teleport to a random screen location. Your objective is to make sure that your score isn't less when you finish a screen than it was when you started it.

You move a little pointer around the screen and if you press fire while it's in the playing area, a line is drawn in the currently selected colour to the cursor position. Switching between the colours is done by clicking on the appropriate bar in the status panel. Using the three coloured lines you have to get the ball trapped in a position so that it's passing over the red coloured areas. When you've got the ball trapped in a suitable safe area it's a good idea to click on the bonus symbol, because that doubles the rate at which you score.



●Two balls in play and lots of time

Sound effects are limited to that of the ball bouncing off something, but there are a couple of reasonable tunes. The graphics are very simple, but colour is used well and is an integral part of the game.

Simplicity, frustration and addictivity are all rolled into one with this. There are 26 screens to complete at three different skill levels. Unfortunately it's a little too easy to complete and the skill levels make little difference. For £2 it's well worth getting though. **GBH**

SECOND OPINION

A wacky game concept that will quickly get you hooked. Unfortunately I think you'll quickly exhaust its potential, but for £2 it's still good value. With a bit more depth of challenge this wouldn't have gone amiss as a full price title. **BW**

GREEN SCREEN VIEW

Distinguishing colours is trickier in green.

FIRST DAY TARGET SCORE

Complete ten levels.

The Verdict

GRAPHICS **43%**
- □ Colour is used well and very important.
- ■ Small and simple ball and lines.

SONICS **49%**
- □ Nice tunes.
- ■ Boing, boing.

GRAB FACTOR **75%**
- □ Intriguing puzzles will have you hooked.
- ■ Initially a little confusing.

STAYING POWER **58%**
- □ 26 levels to complete.
- ■ Too easy to give much in the long term.

AA RATING **70%**
- □ For the budget price it's well worth buying.

AMAZON ADVENTURE

Infogrames, £9.95 cass, £14.95 disk, joystick or keys

This is the third of the Time Troubleshooter games in which Lee Enfield is the hero. His old arch enemy the Yellow Shadow is up to no good again, he's after the Chibchas treasure and poor old Bill, Lee's friend, has been kidnapped by the Shadow. A jungle at the foot of the Andes is the setting this time.

The screen display is very similar to that of *Tournament of Death*, with a small flick screen playing area and a large picture of Lee's face. The expression on Lee's face changes as he gets wounded. The gameplay is similar to *Tournament of Death*.

You have three things to help you in your quest to defeat the Shadow and rescue Bill: a knife, some dynamite and a thermal magneto detector. The detector is a radar type device that shows any creatures or people in range.



●The jungle is filled with dangers

The jungle is filled with dangers, large creatures scurry around in the undergrowth and servants of the shadow stalk you. It's a matter of kill or be killed. Can you defeat the Shadow?

Sound effects are appalling, but there's a pleasant title tune. The graphics are not quite as bad as in *Tournament of Death*, but they are still jerkily animated.

Charging around the jungle fighting and blowing things up is boring and there's little else to do. **GBH**

SECOND OPINION

Uninspiring to say the least. About the most exciting thing is getting blown up by your own TNT. Otherwise the wandering around is tedium itself. If this is a series of games that's going to continue it really must improve in quality. **BW**

GREEN SCREEN VIEW

No problems in green.

FIRST DAY TARGET SCORE

Don't fall asleep playing it.

The Verdict

GRAPHICS **37%**
- □ Lee's face is well drawn.
- ■ Animation is jerky.

SONICS **68%**
- □ Great title tune.

GRAB FACTOR **42%**
- ■ Endless charging around the jungle.
- ■ And more of the same.

STAYING POWER **34%**
- □ Large playing area to explore.
- ■ Not enough variation in things to do.

AA RATING **37%**
- ■ A lot more work needs to be done if Lee Enfield is to improve.

Previews

News and screenshots of three games that should be scorching their way onto the CPC soon.

The Pink Panther

Magic Bytes

That famous panther that is pink is broke again. So that he can live a life of leisure he's taken a job as butler. He's not very reliable though because he's only taken the job so that he can rob his employer during the night. There are five houses that he must rob before he can relax and enjoy himself. Unfortunately all of his employers are sleep-walkers. If they bump into anything then they'll wake up and catch Pinkie in the act. The Pink Panther can stop the walker from waking by holding his hand up in front of him.



The first house has no restrictions on the people they employ, but later houses demand things like a top hat, gold watch, reference or car before you'll be allowed to work for them.

There's another hazard to your night time pilfering in the guise of your old friend Inspector Clouseau, who's been trying to catch you for years. *The Pink Panther* is near to completion.



●Pink Panther is on the prowl

The Dark Side

Incentive

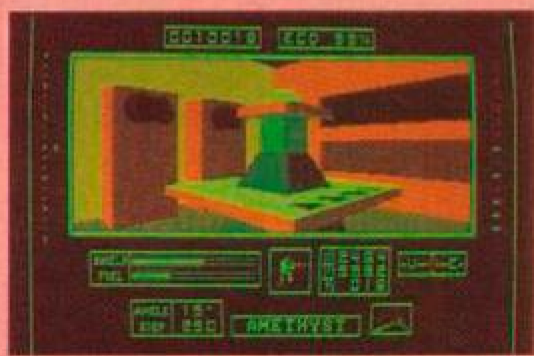
Driller was *Mastergame* in issue 28 and this is the sequel, due out in May. The Freescape system is again being used although it has been enhanced since *Driller*.

It's set 200 years after the events that took place in *Driller*. The banished Ketars have been plotting revenge against the Evathians for several hundred years and now they have the means. On the dark side of one of Evaths moons, Tricuspid, they have built a giant weapon called Zephyr One. It has sufficient power to blow Evath into millions of tiny pieces. The weapon must be destroyed and to achieve this end an energy matrix has to be disabled. The matrix covers a large portion of the planets surface.



●*The Dark Side* features the Freescape system again

In *Driller* you travelled around in a jet or an excavation probe. This time you have a spacesuit and jetpack to explore the planet. There's a limited supply of fuel in the tank, but it can be replaced. As well as surface exploration there is also a series of underground tunnels that you can enter. Tricuspid is not deserted and you have to look out for the tank like Plexors that will try and kill you. *The Dark Side* is due for release in May.



Rimrunner

Palace

This has been programmed by the same team that brought you *Barbarian* (a sequel to *Barbarian* is also planned).

In the outlying regions of the universe is a section of space where the dominant life form is insect based. The Insectoid race developed their technology and began to travel between the stars and colonize other uninhabited worlds. Life was going well for them until the Arachnoids appeared on the scene. They are a hostile race and tried to dominate the Insectoids.

The Insectoids created a series of forcefields to protect their colonies from attack. The forcefields need periodic re-charging and that's where the Rimrunners come in. Rimrunners are Insectoid warriors mounted on the back of bipedal reptilian creatures. They charge around the colony shooting at Arachnoids and re-charging the forcefield generators. There are five generators on each planet and you have to keep them all powered up for a set amount of time. At the end of that time you move on to the next planet in the series.

When it's finished there will be two versions of the game on the same disk or tape. They'll play exactly the same, but the background graphics will be different – as was the case with *Barbarian*. *Rimrunner* is very near to completion as we write this.



●One of the planets that you have to defend

CHEAT MODE

Dick'n'Gary check out your tips, pokes and game-busting ploys. The best ones win an entire issue's *Raves* and the *Mastergame*. Send your latest gem to: Cheat Mode, *Amstrad Action*, 4 Queen Street, Bath BA1 1EJ

POKE METHODS FOR TAPE

Here is how to input the majority of Cheat Mode tape pokes. The instructions for each poke tell you which of the two different methods to use. If you have a 664 or 6128, first type |tape.

METHOD 1

Rewind the game tape to the beginning. Now type in the poke listing. Then type RUN and press the Enter key. (Don't use the key marked CTRL or Control; that would stop the poke from working.) Press the Play key on the cassette deck, then any key on the main keyboard - spacebar will do nicely. The tape should now start to play through in the normal way.

METHOD 2

For this method you have to skip the first bit of the game program. To do that, start by rewinding the game tape to the beginning. Now type in the listing. Then type CAT and press Enter. Start the tape by pressing Play and then any key. Then watch the screen.

Soon you'll get the message Found *something* Block 1. It doesn't matter what the *something* actually is; this will vary from one game to another. If the Cheat Mode instructions just tell you to skip the first block, you should stop the tape here.

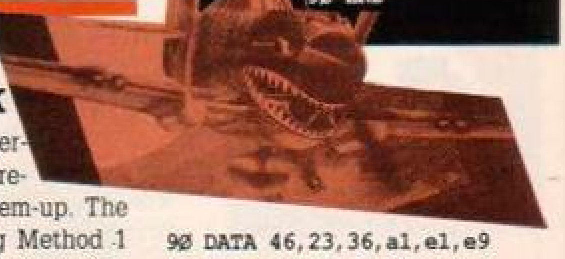
If the instructions tell you to skip several things, stop the tape when the Found message comes up for the last thing you're trying to skip.

Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape running.

Scooby Doo

Nicolo Gavazzeni of Italy has sent in a poke for Elite's game featuring the cowardly hound. It's entered using Method 1 and gives you infinite lives.

```
1 ' Scooby Doo - tape
2 ' by Nicolo Gavazzeni
3 ' Amstrad Action May 88
1Ø OPENOUT "d"
2Ø MEMORY &5DB
3Ø CLOSEOUT
4Ø LOAD "elite",&5DC
5Ø POKE &646,&C9
6Ø CALL &5F2
7Ø POKE &7683,&FF
8Ø CALL &66E8
9Ø END
```



Flying Shark

Phil Howard of Mapperley has hacked into Firebird's scrolling shoot-em-up. The poke is entered using Method 1 and gives you infinite lives and smart bombs.

```
1 ' Flying Shark - tape
2 ' by Phil Howard
3 ' Amstrad Action May 88
1Ø DATA 21,37,bd,36,c3,23
2Ø DATA 36,36,23,36,be,21
3Ø DATA 7Ø,3e,36,c3,23,36
4Ø DATA 19,23,36,be,c3,ØØ
5Ø DATA 3e,32,46,a1,14,7a
6Ø DATA fe,4Ø,28,Ø1,e9,e5
7Ø DATA 21,3e,Ø1,36,c3,21
8Ø DATA 7Ø,3e,36,32,23,36
9Ø DATA 46,23,36,a1,e1,e9
1ØØ DATA 21,3d,be,22,b6,Ø1
11Ø DATA c9,21,18,Ø1,22,a5
12Ø DATA 4f,22,7Ø,3b,c3,ØØ
13Ø DATA cØ
14Ø MEMORY &3ØØØ:y=Ø
15Ø FOR x=&BEØØ TO &BE48
16Ø READ a$:a=VAL("&"+a$)
17Ø POKE x,a:y=y+a:NEXT
18Ø IF y<>&1933 THEN 21Ø
19Ø LOAD"shark1"
2ØØ CALL &BEØØ
21Ø PRINT"Data Error"
22Ø END
```

Breakthru

Darren Ash of Highbridge has hacked into US Gold's game. The poke is entered using Method 1 and allows you to choose the number of lives.

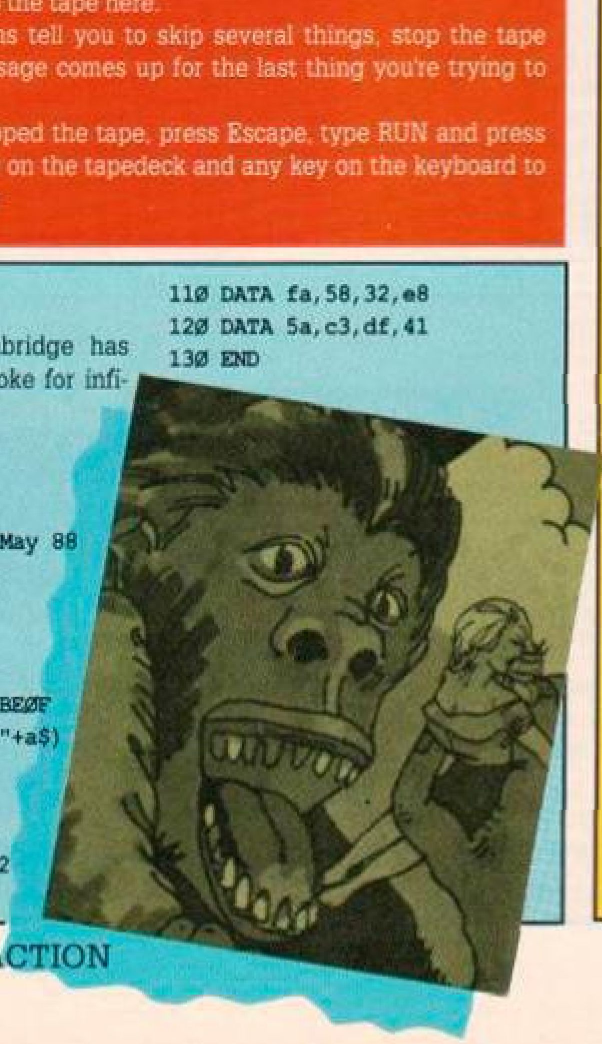
```
1 ' Breakthru - tape
2 ' by Darren Ash
3 ' Amstrad Action May 88
1Ø FOR t=&BEØØ TO &BE3E
2Ø READ a$:a=VAL("&"+a$)
3Ø POKE t,a:NEXT
4Ø INPUT"No of lives(Ø-255)";b
5Ø POKE &BE38,b
6Ø MEMORY &3ØØØ:LOAD""
7Ø CALL &BE14
8Ø DATA f3,dd,21,ØØ
9Ø DATA bf,11,2b,ØØ
1ØØ DATA cd,67,bb,21
11Ø DATA 37,be,22,f2
12Ø DATA bc,c3,c9,bc
13Ø DATA 21,e2,39,36
14Ø DATA c3,23,36,2a
15Ø DATA 23,36,be,21
16Ø DATA 4Ø,ØØ,e5,21
17Ø DATA ØØ,bb,e5,c3
18Ø DATA b7,39,3e,45
19Ø DATA 32,4b,ØØ,3e
2ØØ DATA 99,32,4e,ØØ
21Ø DATA f3,f1,c9,3e
22Ø DATA Ø3,32,8a,Ø1
23Ø DATA c3,ØØ,Ø1
24Ø END
```



Climb-it

Darren Ash of Highbridge has sent in a Method 1 poke for infinite lives.

```
1 ' Climb-it
2 ' By D.Ash
3 ' Amstrad Action May 88
1Ø MEMORY 5999
2Ø LOAD"",6ØØØ
3Ø POKE &179Ø,&Ø
4Ø POKE &1791,&BE
5Ø FOR t=&BEØØ TO &BEØF
6Ø READ a$:z=VAL("&"+a$)
7Ø POKE t,z:NEXT
8Ø CALL 6ØØØ
9Ø DATA af,32,c7,4c
1ØØ DATA 32,1e,4d,32
11Ø DATA fa,58,32,e8
12Ø DATA 5a,c3,df,41
13Ø END
```





Who Dares Wins II

Also from **Edward Reid** of Glasgow is a poke for Alligata's shoot-em-up. It's entered using Method 1.

```
1 ' Who Dares Wins 2
2 ' by E. REID
3 ' Amstrad Action May 88
5 ' LINES 1Ø-13Ø CAN BE MISSED
OUT
6 ' BUT GAME WILL HAVE NO
SOUND
1Ø ENV 1,1,12,1,1,Ø,5,12,-1,2
2Ø ENV 2,1,13,1,1,Ø,15,13,-1,5
3Ø ENV 3,1,13,1,12,-1,3
4Ø ENV 4,11,1,5,2,Ø,12Ø,11,-
1,14
5Ø ENV 5,1,14,1,15,-1,12
6Ø ENV 6,1,12,1,12,-1,9
7Ø ENV 7,15,-1,2
8Ø ENV 8,1Ø,1,1,2Ø,Ø,1,1Ø,-1,2
9Ø ENV 9,11,-1,2,1,1Ø,1,1Ø,-
1,2,1,1Ø,1,1Ø,-1,2
1ØØ ENT
3,5,4Ø,1,5,2Ø,1,1Ø,25,1
11Ø ENT -5,14,-1Ø,1,1,12Ø,1
12Ø ENT -8,1,1,1
13Ø SOUND 129,25Ø,Ø,Ø,5,5
14Ø BORDER Ø:INK Ø,Ø
15Ø INK 1,26:MODE 1
16Ø LOCATE 15,1Ø:PRINT "PLEASE
WAIT"
18Ø LOCATE 15,12:PRINT "LOAD-
ING...."
2ØØ READ A$:IF A$="EJR" THEN
    GOTO 23Ø
21Ø POKE &CØØØ+K,VAL("&"+a$)
22Ø K=K+1:GOTO 2ØØ
23Ø CALL &CØØØ
24Ø DATA CD,65,BC,3E
25Ø DATA FF,CD,6B,BC
26Ø DATA Ø6,ØØ,11,ØØ
27Ø DATA 5Ø,CD,77,BC
28Ø DATA 21,ØØ,5Ø,CD
29Ø DATA 83,BC,CD,7A,BC
3ØØ DATA Ø6,ØØ,11,ØØ
31Ø DATA 5Ø,CD,77,BC
32Ø DATA 21,ØØ,5Ø,CD
33Ø DATA 83,BC,CD,7A,BC
34Ø DATA Ø6,ØØ,11,ØØ
35Ø DATA 5Ø,CD,77,BC
36Ø DATA 21,ØØ,5Ø,CD
37Ø DATA 83,BC,CD,7A,BC
38Ø DATA 21,4Ø,ØØ,11
39Ø DATA 3Ø,6Ø,3E,63
4ØØ DATA CD,A1,BC,21
41Ø DATA 7Ø,6Ø,11,9Ø,5Ø
42Ø DATA 3E,11,CD,A1
43Ø DATA BC,3E,ØØ,32,1A
44Ø DATA 63,32,C1,6Ø
45Ø DATA C3,1Ø,AØ,EJR
46Ø END
```

Space Harrier

Nicolo Gavazzeni of Italy has sent in this poke for Elite's arcade conversion. It gives you 24Ø lives and is entered using Method 2, skip the file "Elite" and run the program.

```
1 ' Space Harrier - tape
2 ' by Nicolo Gavazzeni
3 ' Amstrad Action May 88
1Ø FOR a=Ø TO 15:READ b
2Ø INK a,b:NEXT
3Ø MODE Ø:BORDER Ø
4Ø LOAD "!screen",49152
5Ø OPENOUT "d":MEMORY 949
6Ø CLOSEOUT
7Ø LOAD "!block",95Ø
8Ø DATAØ,26,6,Ø,Ø,9,2,25,15
9Ø DATA 3,16,1Ø,13,21,14,2Ø
1ØØ addr=&EDØ:FOR x=Ø TO 51
11Ø READ a$
12Ø POKE addr+x,VAL("&"+a$)
13Ø NEXT:POKE &583,&EF
14Ø CALL 95Ø
15Ø DATA 5f,48,45
16Ø DATA 4c,4c,4f,5f
17Ø DATA 54,48,45
18Ø DATA 52,45,5f,5f
19Ø DATA fe,51,c3
2ØØ DATA 32,2e,5f,43
21Ø DATA 49,41,4f
22Ø DATA 5f,41,5f,54
23Ø DATA 55,54,54
24Ø DATA 49,5f,fe,d1
25Ø DATA c3,33,2e
26Ø DATA 5f,5f,5f,44
27Ø DATA 41,5f,4e
28Ø DATA 49,43,4f,4c
29Ø DATA 41,5f,5f
3ØØ END
```

Equinox

I Murphy of Accrington has sent in this poke for infinite lives and time. It's entered using Method 1.

```
1 ' Equinox - tape
2 ' by I. Murphy
3 ' Amstrad Action May 88
1Ø DATA cd,37,bc,3e,Ø1,cd
2Ø DATA 6b,bc,Ø6,ØØ,11,ØØ
3Ø DATA 2Ø,cd,77,bc,eb,cd
4Ø DATA 83,bc,cd,7a,bc,3e
5Ø DATA a4,32,2f,2Ø,3e,be
6Ø DATA 32,3Ø,2Ø,c3,ØØ,2Ø
7Ø DATA af,32,13,Ø3,32,48
8Ø DATA Øe,32,49,Øe,c3,ØØ
9Ø DATA Ø3
1ØØ FOR n=Ø TO 48
11Ø READ a$
12Ø POKE
&BE8Ø+n,VAL("&"+a$)
13Ø NEXT
14Ø CALL &BE8Ø
15Ø END
```

Shockway Rider

Niall Brady of Sligo has hacked into FTL's game. It gives you a bonus life every time you bop a bystander rather than every 1Ø bystanders. It's entered using Method 1.

```
1 ' Shockway rider - tape
2 ' by Niall Brady
3 ' Amstrad Action May 88
1Ø DATA 21,37,9Ø,Ø6,ØEE
2Ø DATA Ø8,16,CØ,CD,1AB
3Ø DATA 77,BC,21,DØ,224
4Ø DATA Ø7,CD,83,BC,213
5Ø DATA CD,7A,BC,11,214
6Ø DATA 53,Ø8,21,21,Ø9D
7Ø DATA 9Ø,Ø1,1A,ØØ,ØAB
8Ø DATA ED,BØ,C3,DØ,33Ø
9Ø DATA Ø7,21,A4,73,13F
1ØØ DATA CD,83,BC,CD,2D9
11Ø DATA 7A,BC,3E,ØA,17E
12Ø DATA 32,7B,75,ØE,13Ø
13Ø DATA FF,21,A4,73,237
14Ø DATA C3,16,BD,53,1E9
15Ø DATA 48,4F,43,4B,125
16Ø DATA 57,41,59,ØØ,ØF1
17Ø n=4:a=&9ØØØ:l=1Ø
18Ø WHILE l<17Ø:GOSUB 21Ø
19Ø WEND
2ØØ GOTO 28Ø
21Ø cs=Ø:FOR x=1 TO n
22Ø READ v$:v=VAL("&"+v$)
23Ø POKE a,v
24Ø cs=cs+v:a=a+1:NEXT
25Ø READ c$:c=VAL("&"+c$)
26Ø IF c<>cs THEN PRINT"Data
error in line ",l:END
27Ø l=l+1Ø:RETURN
28Ø MODE 1:CALL &9ØØØ
29Ø END
```





Codemasters game of space combat gets infinite status and shields courtesy of **Darren Ash** from Highbridge.

```
1 ' 3D Starfighter - tape
2 ' by Darren Ash
3 ' Amstrad Action May 88
1Ø FOR t=&BEØØ TO &BE5B
2Ø READ a$:a=VAL("&"+a$)
3Ø POKE t,a:NEXT
4Ø MEMORY &3ØØØ:LOAD""
5Ø CALL &BE14
6Ø DATA f3,dd,21,ØØ
7Ø DATA bf,11,47,ØØ
8Ø DATA cd,67,bb,21
9Ø DATA 37,be,22,3a
1ØØ DATA bf,c3,ØØ,bf
11Ø DATA 21,76,3a,36
12Ø DATA c3,23,36,2a
13Ø DATA 23,36,be,21
14Ø DATA 4Ø,ØØ,e5,21
15Ø DATA ØØ,bb,e5,c3
16Ø DATA 4b,3a,3e,45
17Ø DATA 32,4b,ØØ,3e
18Ø DATA 99,32,4e,ØØ
19Ø DATA f3,f1,c9,21
2ØØ DATA 3e,be,e5,c3
21Ø DATA 37,bd,21,1Ø
22Ø DATA 9a,22,17,7f
23Ø DATA 22,3c,7f,3e
24Ø DATA ea,32,1f,7f
25Ø DATA 32,27,7f,3e
26Ø DATA eb,32,1b,7f
27Ø DATA 3e,ØØ,32,eØ
28Ø DATA 7e,c3,e2,83
29Ø END
```





6128 Games Hacked

J.P. Garner of Blackden has hacked into the games supplied with the 6128. In each case just type in the poke and run it and the game will load with the poke in operation.

Doors of Doom

This poke gives you everlasting weapon activation in Amsoft's game.

```
1 ' Doors of Doom - disk
2 ' by J.P. Garner
3 ' Amstrad Action May 88
1Ø DATA 21,71,ØØ,46,21,65
2Ø DATA ØØ,11,ØØ,cØ,cd,77
3Ø DATA bc,ed,43,72,ØØ,ed
4Ø DATA 53,74,ØØ,2a,74,ØØ
5Ø DATA cd,83,bc,cd,7a,bc
6Ø DATA 3e,3b,32,9c,ØØ,3e
7Ø DATA 27,32,9d,ØØ,c3,57
8Ø DATA ØØ,3e,a7,32,f6,85
9Ø DATA 32,49,83,32,a5,86
1ØØ DATA 32,78,87,32,7c,89
11Ø DATA 32,53,8e,af,32,58
12Ø DATA 92
13Ø DATA 3e,a7,32,1f,92
14Ø ' delete the line above
15Ø ' if you DO NOT want 16Ø
' everlasting weapon 17Ø '
activation.
18Ø DATA c3,99,7c,end
19Ø a=1ØØØØ
2ØØ READ b$:IF b$="end" THEN
   GOTO 24Ø
21Ø POKE a,VAL("&"+b$)
22Ø c=c+PEEK(a)
23Ø a?a+1:GOTO 2ØØ
24Ø a$="DOORSOFD"
25Ø POKE &71,LEN(a$)
26Ø b=a
27Ø FOR a=1 TO LEN(a$)
28Ø q$=MID$(UPPER$(a$),a,1)
29Ø poke &64+a,val(q$)
3ØØ NEXT
31Ø a=b-3
32Ø DATA 21,ØØ,28,11,4f,96
33Ø DATA Ø1,26,ØØ,ed,bØ,c3
34Ø DATA 99,7c
35Ø FOR b=a TO a+13:READ b$
36Ø POKE b,VAL("&"+b$)
37Ø c=c+PEEK(b):NEXT
38Ø DATA 32,32,72,97,99
39Ø DATA 1Ø7,1Ø1,1ØØ,32,98
4ØØ DATA 121,58,32,32,Ø
41Ø DATA 77,73,71,72,84,89
42Ø DATA 32,74,79,69,Ø,72
43Ø DATA 1Ø1,1Ø8,1Ø8,111
44Ø DATA 32,67,114,97,1Ø5
45Ø DATA 1Ø3,33
46Ø FOR a=&28ØØ TO &2825
47Ø READ b:POKE a,b
48Ø c=c+b:NEXT
49Ø IF c=11149 OR c=116Ø5  OR
c=7578 OR c=7122 THEN call
1ØØØØ
5ØØ PRINT "Error in data"
51Ø END
```

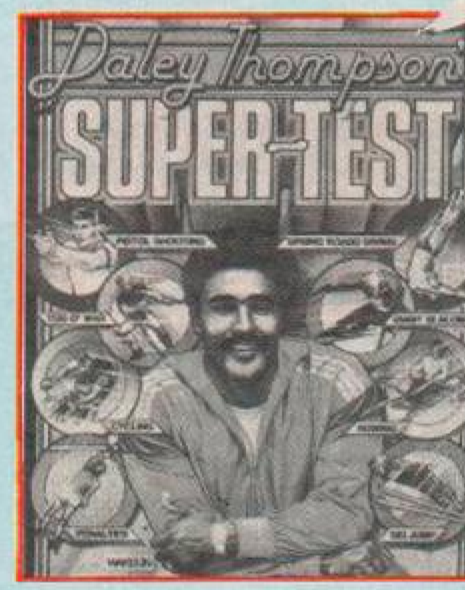
Roland in Time

Infinite lives in the game for time travellers.

```
1 ' Roland in Time - disk
2 ' by J.P. Garner
3 ' Amstrad Action May 88
1Ø MEMORY &1387
2Ø LOAD "rointime",&1388
3Ø POKE &1388,&18
4Ø POKE &37ØA,&A7
5Ø POKE &1715,&A7
6Ø DATA 72,65,67,75,69
7Ø DATA 68,32,32,66,89
8Ø DATA 32,32,84,72,69
9Ø DATA 32
1ØØ FOR a=&23Ø7 TO &23Ø7+15
11Ø READ b:POKE a,b:NEXT
12Ø DATA 32,77,73,71,72
13Ø DATA 84,89,32,32,74
14Ø DATA 79,69,32,32
15Ø FOR a=&231C TO &231C+13
16Ø READ b:POKE a,b:NEXT
17Ø CALL &1388
18Ø END
```

Nomad

Infinite lives for the Ocean shoot-em-up.




```
1 ' Nomad - disk
2 ' by J.P. Garner
3 ' Amstrad Action May 88
1Ø CLS
2Ø DATA Ø6,Øb,11,ØØ,cØ,21
3Ø DATA 4Ø,Ø1,cd,77,bc,21
4Ø DATA 4Ø,ØØ,cd,83,bc,cd
5Ø DATA 7a,bc,c9,end
6Ø a=&7Ø
7Ø READ b$
8Ø IF b$="end" THEN GOTO 11Ø
9Ø POKE a,VAL("&"+b$):a=a+1
1ØØ GOTO 7Ø
11Ø a$="NOMLOAD.BIN"
12Ø FOR a=1 TO LEN(a$)
13Ø q$=MID$(a$,a,1)
14Ø POKE &13f+a,val(q$)
15Ø CALL &7Ø
```




```
16Ø POKE &71,&F4
17Ø DATA cd,7f,Ø,3e,a7
18Ø DATA 32,3a,22,c9
19Ø FOR a=&F4 TO &FC
2ØØ READ b$
21Ø POKE a,VAL("&"+b$)
22Ø NEXT
23Ø CALL &4Ø
24Ø END
```

Supertest Day I

Another poke for infinite lives. Don't worry about your man disappearing because he'll re-appear after the next event.

```
1 ' Supertest Day I - disk
2 ' by J.P. Garner
3 ' Amstrad Action May 88
1Ø MEMORY &7FFF
2Ø LOAD "loadr1",&8ØØØ
3Ø POKE &8ØØ7,&77
4Ø POKE &8Ø2Ø,&6Ø
5Ø DATA cd,3f,cØ,3e,3a
6Ø DATA 32,9f,Ø2,c9,end
7Ø a=&8Ø6E
8Ø READ b$
9Ø IF b$="end" THEN GOTO 12Ø
1ØØ POKE a,VAL("&"+b$):a=a+1
11Ø GOTO 8Ø
12Ø MODE 1
13Ø DATA 21,ØØ,eØ,11,92,8b
14Ø DATA
Ø1,18,ØØ,ed,bØ,c9,end
15Ø DATA 4d,49,47,48,54,59
16Ø DATA 2Ø,4a,4f,45,2Ø,1Ø
17Ø DATA ØØ,ØØ,43,2e,4f,2e
18Ø DATA
44,2e,45,2e,2Ø,2Ø,end
19Ø a=&8Ø76
2ØØ READ b$
21Ø IF b$="end" THEN GOTO 24Ø
22Ø POKE a,VAL("&"+b$)
23Ø a=a+1:GOTO 2ØØ
24Ø a=&EØØØ
25Ø READ b$
26Ø IF b$="end" THEN GOTO 29Ø
27Ø POKE a,VAL("&"+b$)
28Ø a=a+1:GOTO 25Ø
29Ø CALL &8ØØØ
    3ØØ END
```

Hunchback I

Infinite lives again in Ocean's game of bells and walls.

```
1 ' Hunchback I
2 ' by J.P. Garner
3 ' Amstrad Action May 88
1Ø BORDER Ø:INK Ø,Ø:INK
1,18
2Ø INK 2,5:INK 3,25
3Ø ENT 2,9Ø,-6,2
4Ø ENT 1,1ØØ,2,2
5Ø ENV 12,1Ø,-2,1Ø
6Ø PEN 2
7Ø MEMORY &3BFF
8Ø LOAD "!hunch1cd",&4CØØ
9Ø POKE &511A,&A7
1ØØ DATA 45,74,79,69,45
11Ø DATA 67,82,65,73,71
12Ø FOR a=226Ø4 TO 226Ø8
13Ø READ b:POKE a,b:NEXT
14Ø FOR a=22612 TO 22616
15Ø READ b:POKE a,b:NEXT
16Ø CALL &5431
17Ø END
```

Hunchback II

The sequel is given infinite lives too.

```
1 ' Hunchback II - disk
2 ' J.P. Garner
3 ' Amstrad Action May 88
1Ø MEMORY 5999
2Ø LOAD "code"
3Ø POKE &84F6,&A7
4Ø DATA 44,4f,4e,45,2Ø,42
5Ø DATA 59,2Ø,4d,49,47,48
6Ø DATA 54,59,2Ø,4a,4f,45
7Ø DATA 2Ø,4Ø
8Ø FOR a=&4357 TO &4357+19
9Ø READ b$
1ØØ POKE a,VAL("&"+b$):NEXT
11Ø CALL &893Ø
12Ø END
```

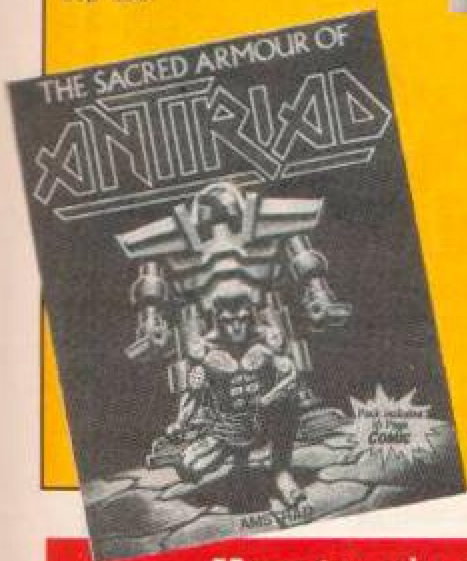
CLASSIC COLLECTION

The section where we reprint requested favourite pokes from the past. If you missed out on a poke for a game then write and let us know which ones you'd like to see again.

Antiriad

There have been several requests for a reprint for the poke for invulnerability in Palace's game. It's entered using Method 1. Watch out though because the radiation can still get you.

```
1 ' Antiriad - tape
2 ' by Stephen Stokes
3 ' Amstrad Action May 88
1Ø FOR a=&2ØØØ TO &2Ø23
2Ø READ v$
3Ø POKE a,VAL("&"+v$)
4Ø NEXT a
5Ø FOR a=&BFØØ TO &BF1A
6Ø READ v$
7Ø POKE a,VAL("&"+v$)
8Ø NEXT a: CALL &2ØØØ
9Ø DATA Ø1,ØØ,ØØ,cd
1ØØ DATA 38,bc,21,4Ø
11Ø DATA ØØ,11,64,ØØ
12Ø DATA 3e,31,cd,a1
13Ø DATA bc,d2,ØØ,ØØ
14Ø DATA f5,3e,c3,32
15Ø DATA 94,ØØ,21,ØØ
16Ø DATA bf,22,95,ØØ
17Ø DATA f1,c3,4Ø,ØØ
18Ø DATA 3e,ØØ,32,be
19Ø DATA 5b,32,c2,5b
2ØØ DATA 2a,a8,ØØ,f3
21Ø DATA d9,Ø6,7f,Øe
22Ø DATA 8c,3a,aa,ØØ
23Ø DATA e6,Ø3,b1,ed
24Ø DATA 49,d9,e9
25Ø END
```



Combat Lynx

Rhys Jones of Peterborough sent in this poke to increase the weight capacity of the Lynx in Durell's game. It's entered using Method 1.

```
1 ' Combat Lynx - tape
2 ' by Rhys Jones
3 ' Amstrad Action May 88
1Ø MODE 1
2Ø MEMORY 563Ø
3Ø LOAD"MAIN"
4Ø POKE 2774Ø,255
5Ø POKE 27741,15
6Ø POKE 2791Ø,255
7Ø POKE 27911,15
8Ø POKE 283ØØ,52
9Ø POKE 283Ø1,48
1ØØ POKE 283Ø2,57
11Ø POKE 283Ø3,53
12Ø CALL 32138
13Ø END
```



Airwolf

Tim Gilbert sent in this poke that makes you invulnerable and allows you to fully explore the game. You can't complete the game using it but at least you can see it all. Don't go off the "legal" screens because the game will crash. It's entered using Method 1.

```
1 ' Airwolf - tape
2 ' by Tim Gilbert
3 ' Amstrad Action May 88
1Ø PEN 15
2Ø BORDER 14
3Ø MODE Ø
4Ø OPENOUT"D"
5Ø MEMORY &3E7:CLOSEOUT
6Ø FOR X=Ø TO 15:READ A
7Ø INK X,A:NEXT
8Ø LOAD"!PROG"
9Ø BORDER 4
1ØØ MODE Ø
11Ø PAPER 9
12Ø POKE &7B33,Ø
13Ø POKE &7B34,Ø
14Ø POKE &7B35,Ø
15Ø CALL &68A8
16Ø DATA 14,26,Ø,23,17,22,15
17Ø DATA 6,26,4,23,2,15,26
18Ø DATA 13,Ø
19Ø END
```

Batman

There have been many requests for a poke for the disk version of Ocean's arcade adventure and so here's Neil McDougall's poke for infinite lives. Run it and it automatically loads the game and pokes.

```
1 ' Batman - disk
2 ' by Neil MacDougall
3 ' Amstrad Action May 88
1Ø MODE 1:PAPER Ø:INK Ø,Ø
2Ø BORDER Ø:INK 1,6
3Ø INK 2,2Ø:INK 3,26
4Ø LOAD"bat3.scn",&cØØØ
5Ø FOR x=&bfØØ TO &bf2d
6Ø READ s$
7Ø POKE x,VAL("&"+s$)
8Ø NEXT
9Ø CALL &bfØØ
1ØØ DATA Øe,Ø7,11,4Ø,ØØ,21
11Ø DATA ff,bØ,cd,ce,bc,21
12Ø DATA 27,bf,11,ØØ,Ø1,Ø6
13Ø DATA Ø6,cd,77,bc,21,ØØ
14Ø DATA Ø1,cd,83,bc,cd,7a
15Ø DATA bc,21,9Ø,1c,36,ØØ
16Ø DATA c3,ØØ,Ø1,62,6d,2e
17Ø DATA 73,62,66,ØØ,ØØ,ØØ
18Ø END
```

Manic Miner

Phil Doherty of Luton sent in this poke for Amsoft's game of toilets and telephones. It gives you infinite lives and is entered using Method 1.

```
1 ' Manic Miner - tape
2 ' Amsoft version
3 ' by Phil Doherty
4 ' Amstrad Action May 88
1Ø MEMORY &5Ø6D
2Ø LOAD"MANMIN15",&5Ø6E
3Ø POKE &6E25,Ø
4Ø CALL &5Ø6E
5Ø END
```

Here's a poke for the Software Project's version of the game. It gives you infinite lives, allows you to fall from any height, stops the air running out and lets you switch screens by pressing ESC.

```
1 ' Manic Miner - tape
2 ' Software Project's ver-
sion
3 ' Amstrad Action May 88
1Ø MEMORY &45ØØ
2Ø LOAD"!DATAMK1V1.3"
3Ø POKE &6FA9,Ø
4Ø POKE &713E,Ø
5Ø POKE &7311,Ø
6Ø POKE &74Ø1,24
7Ø CALL &6E5C
8Ø END
```



How to win an ENTIRE ISSUE'S rave software!

If you want to win an entire issue's *Rave* software, including the *Mastergame*, then all you have to do is produce an excellent map, poke or playing tips.

The best solution will win a copy of every *Rave* and the *Mastergame* from the issue in which the solution is printed. The number of games will vary of course, but it should be at least five, but in a good issue it may meet double figures. We also give five runner-up prizes every month of a *Rave* or the *Mastergame* in that issue.

J.P. Garner gets this months *Mastergame* and all the *Raves*. The runners up are:- **Darren Ash**, **Phil Howard**, **Niall Brady**, **I. Murphy** and **Nicolo Gavazzeni**.

Whooops!

A line was left out in the Driller tape poke in issue 3Ø. Insert the following and all should be well:-

```
5 MEMORY &1ff
```

THE PILGRIM

This month the Pilgrim brings definitive news of Infocom availability; introduces a new regular feature - Perry's Piece; gets adventurers adding their own objects in the Pilg Program-It-Yourself guide; and answers some of your many letters...What more could you want, except more pages from the country's best-known adventure writer?

Rod & Staff Monthly

A Newsletter for Wanderers

Edited by the Pilgrim. Price: Free to all Followers of the Straight and Narrow Path Issue 4

INFOCOM ON TAP!

OK, so Activision are standing firm in their decision not to release new Infocom titles for the Amstrad. That's bad news, but don't despair because there are still nine titles available from the company's existing stockpile. To clear up confusion, the Pilg asked Activision to provide a definitive list of what they still have available, so I can now reveal that the following titles are available at the time of writing:

Ballyhoo, Cutthroats, Hollywood Hijinx, Lurking Horror, Planetfall, Sorcerer, Spellbreaker, Stationfall, and *Suspect*

The titles cost £24.99 each and are available from:

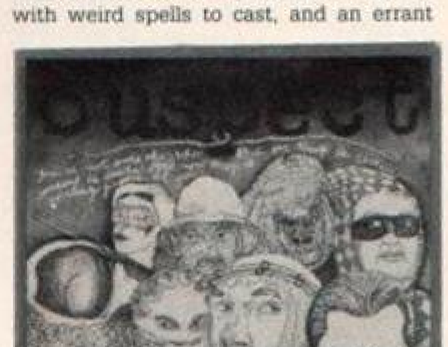
Also, it would help our campaign to keep Infocom titles for the Amstrad going if you were to mark your order clearly with the message 'AA Campaigner'. All orders marked in this way will be filed and if there's a prospect of future Infocom releases for the Amstrad an Activision representative will let you know directly by post.

All these games are of a very high quality, but assuming you can't afford to buy the lot here are a couple of recommendations:

Ballyhoo
Set in the circus, with some difficult puzzles. It's not one of Infocom's best, but still manages to convey the atmosphere of circus life very effectively.

Lurking Horror
Superb take-off of Lovecraft Cthulhu horror-fiction, complete with a 'thing' below the GUE Tech which you discover after trying to complete your end-of-term thesis on a dark and stormy night...

Sorcerer
One of the best of the 'Enchanter' series, with weird spells to cast, and an errant magician, Belboz, to track down. Experience hideous psychic tortures, explore deserted realms, and have a darn good time...



Stationfall
Sequel to Planetfall, with the reappearance of your robotic pal Floyd and a particularly pessimistic companion. Very funny in parts, but also gripping as you fathom the mystery of an apparently deserted space station.

Suspect
OK, you all know by now that this is the Pilg's favourite. Tons of interaction with other characters as you try to identify the murderer of a society hostess at a fancy-dress ball. The murderer, however, has done a pretty good job of pinning the crime on YOU...

Doom is nigh!

Topologika, who's games *Countdown to Doom* and *Philosophers Quest* were recently reviewed on these pages, have announced the imminent release of *Return to Doom*, by the same author, Peter Killworth.

The game is to be part 2 of a *Doom* trilogy, with the third part *Last Days of Doom* to be released later this year. Fellow Pilgs may remember Peter Killworth's letter, published on these pages a little while back, defending the absence of an EXAMINE command in his games. Truth be told, the earlier titles betrayed their primitive origins on the BBC machine – check out the forthcoming review of *Return* to see how it measures up. Price will be £12.95, so it'll have to be good!

Pilg boob

In an earlier issue this year, the Pilg stated that Magnetic Scrolls games were compatible with the 464 plus RAM pack. On further investigation, it appears that this is not the case after all. Level 9 games work fine on all formats, but Mag Scrolls do need a 6128. My sincere apologies for this – I was told that the two were compatible, but readers have since put us right on this one.

CONTINUED ON PAGE 66

The Adventure Continues...

This month sees the second part of our new adventure series. The Pilg shows you how to add lines to the listing printed last month, that will enable you to walk from room to room. Even better, we begin the process of customisation – enabling you to add your own twists to the game...

Here's what you have to do. Switch on your computer and enter the listing below, then save it with the filename MODULE. Then take the disk or tape on which you saved last month's listing and type LOAD "filename" (depending, of course, on what filename you gave it when you saved it...you DID save it, didn't you!?).

You now need to make three additions to last month's listing. First, EDIT line 5Ø0, adding the statement CLS #4 to the beginning, so it reads as follows:

```
5ØØ CLS #4: PRINT #4, "Exits lead ";direction$;: GOTO 52Ø
```

Next, EDIT line 6Ø, adding the words NDOORS=3 at the end of the line, so it now reads:

```
6Ø nobnames=3: nobjects=2: ndirections=16: nverbs=2: nloca-
tions=2: maxwords=4: ndoors=3
```

Now EDIT line 7Ø, adding the words DOORNO(NLOCATIONS,8), DOORSTAT(NDOORS), so it now reads:

```
7Ø DIM location$(nlocations), exitcode(nlocations),
object$(nobjects), obloc(nobjects), obstat(nobjects),
word$(maxwords), doorno(nlocations,8), doorstat(ndoors)
```

That's all the changes you need to make to the basic listing to allow the new module to function. You should now do three things:

1) Save the program under a new filename, just in case you mess up steps 2 and 3 below, to save you having to make the above changes again.

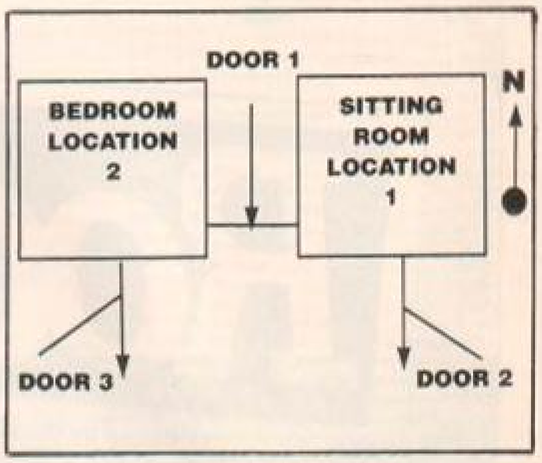
2) Type MERGE "MODULE" – this will merge the new lines you typed in this month with last month's listing, giving you a new version of the main program.

3) Save the whole, updated main program under a new filename.

You can now run the program, and will find that typing in a direction will either move you from one room to another, or tell you that the door is closed. We'll be opening them in the next issue!

How it works...

What we've done is add some doors to our listing. Each door connects two rooms and can be either open, shut, or locked. We've added three doors in total, and the map for our game now looks like this:



As you can see, at the moment doors 2 and 3 lead nowhere – which is why they're closed! We don't want you ending up in limbo just yet...

The first thing we did was tell the program that we were introducing some doors. We did this by editing line 6Ø, adding a variable NDOORS which will keep track of the number of doors in the game. Whenever we introduce a new one, we'll alter the value of that variable.

Next we set up two arrays. The first array, DOORNO(LOCATION,DIRECTION), has one element for each direction in each location. Into this array we read the data in line 5820. Then, when the player asks to move in a particular direction, we can check the contents of the array to see if there is a door there and – if there is – what number it is.

MODULE 1

Moving around...

```
340 RESTORE 5820: FOR x=1 TO nloca-
tions: FOR y=1 TO 8: READ doorno(x,y):
NEXT y: NEXT x
350 RESTORE 6000: FOR x=1 TO ndoors:
READ doorstat(x): NEXT x
2010 '
2020 REM 6. Jump to appropriate action
sub-routine
2030 '
2040 IF direction<>0 THEN GOTO 2240
2180 '
2190 REM return to beginning of main loop
and get another input
2200 GOTO 410
2210 '
2220 '
2230 REM change player location
2240 d=(LOG(dircode)/LOG(2))+1: IF
doorno(ppos,d)<>0 THEN GOTO 2260
2250 PRINT #3, "Error: door not defined for
location ";ppos;"; direction ";direction;" ":
STOP
2260 IF doorstat(doorno(ppos,d))=2 THEN
GOTO 2300
```

Line 340

The data on line 5820 holds a door number for every possible exit in each location. We can always change the data in the array during play.

line 2240

Variable d holds a number in the series 1,2,4...128 indicating one of eight possible directions. The values for each direction are held in line 5700. The formula at the beginning of line 2240 converts the number to the range 1,2,3,4,5...8, making it easier to index the array DOORNO.

line 2250

If the program reaches this line, it means that there's an exit defined for the location in the array EXITCODE, but no door- number has been assigned to it in the array DOORNO.

line 2260

See diagram 2 for an explanation of door status values.

lines 2300 -2350

Change the player's position by reading the data for doors in line 2360. Each data entry comprises the door number, followed by the two locations it connects. Line 2340 simply checks to see which location the current location is connected to, and updates the variable PPOS, which keeps track of the player's position.

```
2270 REM Print message if door locked or
closed
2280 message=doorstat(doorno(ppos,d))+1:
stream=6: GOSUB 9000: GOTO 660
2300 RESTORE 2360
2310 x=0: WHILE x<>doorno(ppos,d)
2320 READ x,y,z
2330 WEND
2340 IF ppos=y THEN ppos=z ELSE ppos=y
2350 GOTO 410
2360 DATA 1,1,2
5800 '
5810 REM data for doors - lines 5820, 21,
22
5820 DATA 0,1,0,2,0,0,0,0
5821 DATA 0,0,0,3,0,1,0,0
6000 DATA 2,1,1
8999 REM Subroutine-store lines 9000...
9000 RESTORE 9050: m=0: WHILE
m<>message
9010 READ m,m$
9020 WEND
9030 IF m$="" THEN PRINT #3, "Error unde-
fined message number ";message: STOP
9040 PRINT #stream, m$: PRINT: m$="":
message=0: RETURN
9050 DATA 1,"The door is locked",2,"The door
is closed"
```

Each door has a status value to indicate whether it is open, closed, or locked. The values are as follows:

0	1	2
LOCKED	CLOSED	OPEN

The initial values for each door are read into the array DOORSTAT(DOORNO) from line 6000.

So...what do we have to do when we move around the map? First, the input routine determines in lines 1070-1160 whether the player has input a direction command. In this case, line 2240 directs us to the appropriate routine to change location and reprint the relevant details on the screen. The way the routine does this is explained in the notes beside the listing itself.

Saving space

We've also introduced a "message print routine". This is for convenience later in the game – you'll find yourself printing messages to the screen so often that it helps to (a) keep all the messages in one place and (b) have one routine that does the printing, thereby saving dozens of PRINT statements.

Sub-routines like this one (at line 9000) have what are known as "entry conditions" and "exit conditions". The former indicates the information required by the routine when we enter it – in this case, the entry conditions are that:

1) the variable MESSAGE should hold the number of the message to be printed.
2) the variable STREAM should hold the number of the window in which the message is to be printed. Refer to line 120 for the uses of each of the six windows in the program.

The exit conditions simply tell us how the sub-routine leaves the variables when it returns us to the main program. In this case it sets the MESSAGE and STREAM variables back to zero.

From now on, when we want to print one of several messages to the screen, we shall assign them numbers, stuff them in a DATA statement in the message store with their number beside them, and get the routine to select the right one and print it.

NOTE: You may realise that it isn't necessary to prefix each message with its number – all that is required is to cycle through the list a fixed number of times until we reach the right one. However, by adding message numbers into the DATA statement we will make things much easier for ourselves later on. With only two messages in the store, there's no problem – but with 100 it would be a very tedious counting through the whole list to work out what number a certain message was. The point here is that the most convenient way of doing something in program, is not always the most efficient. We'll be doing our best to make the right compromise in every case, but you can always alter the routines if you want to try something different.

Customisation – adding a new object

OK, so you'd like to add an object of your own. How do you go about it? Let's go through the process step by step – it really is very simple...

1. Tell the program we're adding another object by increasing the value of NOBJECTS in line 60 by one.
2. Decide how you want the object to be described by the program, together with its start location and its status. Then enter this information in the object data store. For example:

Object description: "a smelly bone"
Location: in the bedroom (location 2)
Status: portable, not too heavy, edible, visible

The status value is worked out in binary fashion, in which we assign a significance to the various bits of an 8-bit binary number as follows:

BIT No	7	6	5	4	3	2	1	0
	VISIBLE?	SPARE FLAG	01=EDIBLE 10=DRINKABLE 11=DESTRUCTIBLE		WEIGHT 1-3 Units (00=NOT PORTABLE)		CONTAINER STATUS 00=NOT OPENABLE 01=LOCKED 10=OPEN 11=CLOSED	

This technique was originally described in the Pilg Programming Course Part 3. (Issue 19, April 1987). Don't panic if it seems incomprehensible – we'll be looking at it in more detail again later in the series. The bit system for objects is not yet implemented in the program, so if you want you could simply enter a zero as the status value for the time being. However, our bone is visible, portable (and light), is inedible, and not openable, so the status byte is:

1	Ø	Ø	1	Ø	1	Ø	Ø	=148

We therefore edit line 5030 to read:

```
5Ø3Ø DATA "a dirty handkerchief",1,128,"a large chest",2,Ø,"a smelly bone",2,148
```

The program can now tell us that the bone is there – RUN it and see. However, it won't allow you to refer to the object, because we still need to enter the data for the program to recognise. This is done by adding to the list of OBNAMES in line 5600. Here you can enter as many synonyms for the object as you like, followed by the object number it refers to.

Our bone is object number three. We want the player to be able to call it a "bone" or a "skull". We therefore EDIT line 5030 to read:

```
5Ø3Ø DATA
"hanky",1,"handkerchief",1,"chest",2,"bone",3,"skull",3
```

...and that's it! Now try adding some other objects and seeing how you get on.

Next month:
We add in a new location, and show you how to devise your own for customising the program – so you'll be able to start building up your own map.

Didn't get the first listing?

Back copies of last month's issue are available from our Somerton office – see Special Offers pages for details.

You can still get photocopies of the Pilg's Programming Course prior to this new series by sending 50p worth of stamps plus an A4 self-addressed envelope to:
PILG PROGRAMMING OFFER
4 QUEEN STREET
BATH
BA1 1EJ.

This offer will close next month – so hurry if you want to take advantage of it.

PILGRIM POST

'In the March issue of Amstrad Action you reviewed an adventure called 'The Case of the Mixed Up Shymer'. You stated quite clearly that it was programmed using GAC, but the screen shot printed with the review shos a redefined character set. How do you use a redefined character set with files created by GAC as when the load they reset the character set.

I have designed many fedefined fonts and I know very well how to create and use them and have been doing so for several years. As I rarely use graphics in my adventures, I would rind a redefined character set most appropriate.

P D Vincent, Worcester

Well spotted, Mr Vincent, there is indeed a mystery here – but one I can solve. It's true that you can't use redefined character sets with GAC. This is partly – I suspect – because of programming policy which tends to make the product less transparent than it might be to minimise piracy. For example, even in STAC – the new ST version which is otherwise very powerful – there is still no provision for calling your own routines or blocks of user-defined code (a dedicated character-handler, for example). This is a pity, but there's little that can be done about it.

Back to Shymer, however, and the solution is simple. The program has some extra code tacked on in the form of a separate routine written by Alex Aird, which allows the character set to be redefined. I'm not sure it Alex would be prepared to part with it, but you can always try writing to him c/o the Pilgrim and I'll pass the letters on.

I have decided to purchase *PAW* after your complimentary review but am unable to find Gilsoft's address or phone number.

Neil Barnes, Colchester

Wise decision, Neil. Now that we are definitely NOT going to get an Advanced GAC for the Amstrad (as was suggested last year), PAW is definitely THE adventure creator for the CPCs. I wasn't able to get hold of Gilsoft's address at the time of writing, but you can phone them for order details on 0446 732765.

I've just bought a disc-drive for my 464 (ooer) but I have some reservations about buying an Infocom game, although they are obviously of very high quality (in content and style). What I want to know is, do Infocom adventures operate under CP/M? If so, I may have trouble reading the text as I use my 464 with a modulator and a telly, and have trouble reading CP/M. My other problem would be the difficulty level, as I had problems on *Seabase Delta*.

JF, Runcorn

Trying to run Infocom games on a 464 + DDI is a risky business. In theory, some Infocom titles will work under CP/M 2.2, but in practise most of the later (and better) games require more memory and will only work on a 6128. Also, as with any text-only game, you will find reading the 80-column text on a TV rather uncom

As far as the difficulty level goes, you wouldn't have any problems. Some of the most difficult games I've played have been cheap, cassette-based home-brewed adventures. The most difficult problems to crack are those which are, at heart, illogical, irrational, and poorly thought-out. As a result, you tend to crack such puzzles after many trial-and-error approaches, and even then you feel more relief than satisfaction at having solved them. You won't get those sort of puzzles in an Infocom game. Solving them demands thought, not brute force, and the rewards are greater!

Different people find different games present different levels of difficulty. Of the Infocom games listed in Rod and Staff Monthly in this issue, I personally found Sorcerer the easiest – but Anita Sinclair told me she found Suspect very easy to crack. So there's no easy answer to your last question, I'm afraid. Best thing to do is get the game that appeals most to you – that way you'll put more effort into solving it.

PERRY'S PIECE

Andrew Perry's a new addition to the Pilg team. Perry's Piece, in conjunction with Pilg's Postscript, is a short, monthly chatter-box that takes a look at some aspect of the adventuring scene. You can write to Andrew c/o The Pilgrim, 4 Queen Street, Bath, BA1 1EJ.

It has come to my notice while reading various magazines that, where the issues of 'computer adventure game' and 'role playing games' are concerned, a certain amount of snobbery has entered into the adventure world as a whole. Whether this is intentional or not, it does raise some important points about the difference between adventures and RPGs and about the definition of an adventure game.

That computer adventures are a by-product of the D&D craze of the early seventies in America is a well-documented fact, these computer programs having been developed from the first, and much emulated, Crowther and Woods game 'Colossal Cave'. Clones of the latter were very much in vogue until recent years and the arrival of hordes of interactive characters, intelligent (?) multi-sentence parsers with 2000+ vocabularies and hi-res graphics.

Now, to say that the computers and their accompanying software have developed to such an extent as to be able to match a role-playing game run by a human game master is, to put it lightly, absolute rubbish. Even the most well thought-out and designed program, running on any home micro – be it 8-bit or 16-bit – would be unable to cope with all the possible enventualities within a true RPG. This holds true despite the increased storage space of 16-bit machines and the amount of research spent on the development of Artificial Intelligence techniques.

Put the computer against the average human game master, who will already have had years of background knowledge, be it from books, magazines, TV, videos, or films. All of these sources ofinformation are there forhim to fall back on to make a quick snap judgement about the change in his expected plot due, perhaps, to a player's unforeseen action. He can tailor the situation to fit into the game without, hopefully, the player being any the wiser. And from there he will be able to return quickly to the plot of the the game he had planned. To do this sort of process, which we being human take for granted, would be quite impossible for any computer program available at present.

The basic problem with all computer adventures is that the programs are limited to the responses thought of at the time of coding, and not at the time of the game. This lack of knowledge about the player's actions can only be lessened by rigorous playtesting and past experience – and even then the computer will only be able to play a much restricted game.

The big question is whether this will anways be the case. Fiction is a product of human imagination and a computer is only a tool for furthering this, or for communicating it in another form. But at the same time, some areas of programming (the PROLOG language in particular) allow computers to assess the inputs of a user and draw inferences from them, devise their own rules as a result, and come up with less predictable responses. But so far no-one has taken the plunge and used PROLOG in an adventure, which seems a great pity. Infocom, for example, used to use a version of LISP in developing their games – a language much used in AI. But from there, so the Pilg tells me, they appear to have moved over to using C – which is taking us all away from the AI approach and back towards the idea of an adventure program as a set of sequential, fixed instructions. Any gifted PROLOG programmers out there?

PHILIPPE ULRICH / DIDIER BOUCHON

CAPTAIN BLOOD

MUSIC JEAN-MICHEL JARRE





A breathtaking galaxy on the outer rim of the universe. Worlds with astonishing creatures and animated 3D graphics, a thrilling scenario bursting with humour, the like of which you've never seen. Everything about CAPTAIN BLOOD makes it the type of game you just HAVE to play.

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TYPE-INS

An assortment of educational listings to get you in tune for exams. Plus a healthy batch of utility type-ins.

Educational Type-Ins

Here's a special educational supplement to Type-Ins. We would like to see many more educational programs being sent in because there seems to be quite a demand for them. So if you've written a program that does anything from starting five year olds reading to aiding O-level revision,

Quadsolver

The second of **James Hale**'s routines. This one solves quadratic equations for you. Very useful. The program asks for three values; a, b and c. The computer then does the rest.

```
1 ' Quadsolver
2 ' by James Hale
3 ' Amstrad Action  May 88
10 MODE 2:DIM q$(8)
20 PRINT"Program to solve quadratic equations"
30 PRINT"-------------------------------------":PRINT
40 PRINT"Type in the three coefficients a,b,c with a comma
   between terms."
50 PRINT"Then press enter."
60 INPUT a,b,c:IF a<>0 THEN 80
70 PRINT:PRINT"This is not a quadratic equation.":GOTO 180
80 d=b*b-4*a*c:IF d<>0 THEN 110
90 PRINT"Both roots are equal,and have the value:";-b/(2*a)
100 GOTO 180
110 PRINT:IF d>0 THEN 130
120 PRINT"This equation does not have real roots.":GOTO 180
130 d=SQR(d):IF b>=0 THEN 150
140 r1=(-b+d)/(2*a):GOTO 160
150 r1=(-b-d)/(2*a)
160 r2=c/(a*r1)
170 PRINT"The two roots are ";r1;"and ";r2
```

Formulae

To help you with your maths homework, **James Hale** from Bristol has kindly sent in two programs that are excellent for solving certain mathematical problems.

Formulae is designed to work out areas and volumes of certain shapes. From its main menu you can select options to work out the area of a circle, volume of a cone, surface area of c cylinder and so on. Simply press any key between 0 and 9 and then strike return. Depending on your selection, you will be prompted to input various values for the computer to work with.

```
1 ' Formulae
2 ' by James Hale
3 ' Amstrad Action  May 88
10 INK 1,26:BORDER 26:MODE 1:PLOT 10,10:DRAW 10,390
20 DRAW 630,390:DRAW 630,10:DRAW 10,10:LOCATE 15,2
30 PRINT"MAIN MENU":LOCATE 15,3:PRINT"---------"
40 RESTORE 500:FOR t=0 TO 9:LOCATE 9,t+4+c:c=c+1
50 PRINT CHR$(t+48);" - ";:READ a$:PRINT a$:NEXT
60 LOCATE 12,24:INPUT"ENTER YOUR CHOICE ",a
70 IF a=0 THEN 90
80 ON a GOTO 130,170,200,240,290,330,360,400,450
90 '       **** area of circle ****
100 CLS:INPUT"What is the radius of the circle ",r
110 CLS:ac=PI*r*r:LOCATE 10,10:PRINT"Area of circle=";ac
120 GOTO 480
130 '       **** area of sector ****
140 CLS:INPUT"Enter number of degrees in sector ",x
150 INPUT"Enter radius of sector ",r:CLS:LOCATE 9,10
160 sec=x/360*PI*r*r:PRINT"Area of sector=";sec:GOTO 480
170 '       **** circumference of circle ****
180 CLS:INPUT"Enter the radius of circle ",r:CLS:LOCATE 9,10
190 cir=2*PI*r:PRINT"Circumference=";cir:GOTO 480
200 '       **** length of an arc ****
210 CLS:INPUT"Enter number of degrees for the arc ",d
220 INPUT"Enter radius of the arc ",r:CLS:LOCATE 9,10
230 leg=d/360*2*PI*r:PRINT"Length of arc=";leg:GOTO 480
240 '       **** volume of a cone ****
250 CLS:INPUT"Enter radius of cone ",r
260 INPUT"Enter perpendicular height of cone ",h:CLS
270 LOCATE 9,10:cone=1/3*PI*r*r*h
280 PRINT"Volume of cone=";cone:GOTO 480
290 '       **** volume of a cylinder ****
300 CLS:INPUT"Enter radius of cylinder ",r
310 INPUT"Enter height of cylinder ",h:CLS:LOCATE 4,10
320 cyl=PI*r*r*h:PRINT"Volume of the cylinder=";cyl:GOTO 480
330 '       **** volume of a sphere ****
340 CLS:INPUT"Enter radius of sphere ",r:CLS:LOCATE 5,10
350 s=4/3*PI*r*r*r:PRINT"Volume of a sphere=";s:GOTO 480
360 '       **** surface area of a cone ****
370 CLS:INPUT"Enter SLANT height (l)of cone ",l
380 INPUT"Enter radius of cone ",r:CLS:LOCATE 2,10:sur=PI*r*l
390 PRINT"Surface area of the cone=";sur:GOTO 480
400 '       **** surface area of a cylinder ****
410 CLS:INPUT"Enter radius of cylinder ",r
420 INPUT"Enter height of cylinder ",h:CLS:LOCATE 1,10
430 cyl=2*PI*r*r*h:PRINT"Surface area of the cylinder=";cyl
440 GOTO 480
450 '       **** surface area of a sphere ****
460 CLS:INPUT"Enter radius of sphere ",r:CLS:LOCATE 1,10
470 s=4*PI*r*r:PRINT"Surface area of the sphere=";s
480 LOCATE 4,25:PRINT"Press SPACE to return to main menu"
490 IF INKEY$<>" " THEN 490 ELSE RUN
500 DATA area of a circle,area of a sector
510 DATA circumference of a circle,length of an arc
520 DATA volume of a cone,volume of a cylinder
```

Deviant

Statistics a chore? Does standard deviation get you down? **Lee Harland** from Durham may have a program to get you out of your fix. His routine asks for the number of samples and the frequency of each sample. With that information the computer can work out standard deviation and mean deviation.

```
1 ' Deviant
2 ' by Lee Harland
3 ' Amstrad Action  May 88
1Ø SYMBOL AFTER 32:SYMBOL 88,255,Ø,99,1Ø8,56,1Ø8,198,Ø
2Ø SYMBOL 94,224,16,224,128,224,Ø,Ø,Ø
3Ø MODE 2:BORDER 13:INK Ø,1:INK 1,26:PAPER Ø:PEN 1:CLS
4Ø PRINT"Standard deviation and mean deviation from the mean."
5Ø PRINT:PRINT"Press a key when the program halts."
6Ø PRINT:INPUT "No. of samples >",n
7Ø DIM samp(n):DIM freq(n):FOR i=1 TO n
8Ø PRINT"Sample no. (";i;")":INPUT ">",samp(i)
9Ø PRINT"Frequency of sample no. (";i;")":INPUT ">",freq(i)
1ØØ PRINT STRING$(8Ø,"-"):NEXT:PRINT STRING$(8Ø,"*")
11Ø REM total freq
12Ø FOR x=1 TO n:totalf=totalf+freq(x):NEXT
13Ø PRINT CHR$(32)CHR$(19Ø);" Frequency =";totalf
14Ø PRINT"Here are the Freq. * x val's   :-"
15Ø REM mean
16Ø FOR x=1 TO n:fx=samp(x)*freq(x):totalfx=totalfx+fx
17Ø PRINT fx:NEXT:mean=totalfx/totalf:PRINT STRING$(8Ø,"-")
18Ø PRINT" Mean =";mean
19Ø WHILE INKEY$<>"":WEND:WHILE INKEY$="":WEND
2ØØ REM f(x-x)
21Ø FOR x=1 TO n:xx=samp(x)-mean:fxx=ABS(freq(x)*xx)
22Ø totalfxx=totalfxx+fxx:totalfxxsq=totalfxxsq+(fxx*ABS(xx))
23Ø PRINT" x-X =";xx;"   *    f(x-X) =";fxx;
24Ø PRINT"   *    f(x-X)^ =";fxx*ABS(xx):NEXT
25Ø WHILE INKEY$<>"":WEND:WHILE INKEY$="":WEND
26Ø PRINT:PRINT CHR$(19Ø);" f(x-X) =";totalfxx:PRINT
27Ø PRINT CHR$(19Ø);" f(x-X)^ =";totalfxxsq
28Ø PRINT"******************************************"
29Ø PRINT"Mean deviation from the mean = ";totalfxx/totalf
3ØØ PRINT"******************************************"
31Ø v=totalfxxsq/totalf:sd=SQR(v)
32Ø PRINT"Standard deviation  =";sd
33Ø PRINT:PRINT"(variance =";v;")"
34Ø WHILE INKEY$<>"":WEND:WHILE INKEY$="":WEND:RUN
```

Utility type-ins to make your micro move

Disk compactor

This lengthy listing sent in by **P Shersby** from Mablethorpe, Lincs, can speed up disk operation by sorting information held on disk.

One of the problems with Amstrad disk drives is that when a disk is frequently updated, loading and saving can become very slow. This is particularly noticeable with disks used by databases, word processors and other programs that often store and retrieve data. The reason for this is simple: data saved to disk will locate itself on any empty sectors (or spaces on the disk). This often results in data or programs being spread all over the disk. When the data is subsequently loaded back, the drive head has to perform acrobatics – time consuming.



The cure is to arrange data from particular files in sequential order. P Shersby's program does exactly that. The difference in loading time can range from hundredths of a seconds to several seconds.

After typing in the listing and saving it to a disk, insert the disk you wish to rearrange and type |COMPACT. You will be asked which drive to use; enter either A or B. Then you will be asked the disk's format (either data or system). Press either D or S. If you don't know the format of a disk enter the line below:

```
IF PEEK(&A89F)=&41 THEN PRINT "SYSTEM" ELSE PRINT "DATA"
```

Ensure you have no roms switched in when you enter the above as you may get incorrect results. If SYSTEM appears on screen then press S when asked for the disk's format, otherwise answer D to the prompt.

If you remove the disk from the drive while Compact is working, you will corrupt the disk's contents.

```
1 ' Disk compactor
2 ' by P Shersby
3 ' Amstrad Action May 88
1Ø MEMORY &7FFF:addr=&9ØØØ:li=8Ø:sum=Ø
2Ø FOR offset=Ø TO 15:READ a$
3Ø IF a$="end" THEN 7Ø
4Ø POKE addr+offset,VAL("&"+a$):sum=sum+VAL("&"+a$):NEXT
5Ø READ b$:IF sum<>VAL("&"+b$) THEN PRINT "Error in ";li:END
6Ø addr=addr+16:li=li+1Ø:sum=Ø:GOTO 2Ø
7Ø PRINT "DISC COMPACTOR INSTALLED":CALL &9ØØØ:END
8Ø DATA 21,Ø9,9Ø,Ø1,ØD,9Ø,C3,D1,BC,ØØ,ØØ,ØØ,ØØ,19,9Ø,C3,514
9Ø DATA 2A,9Ø,C3,2A,9Ø,C3,2A,9Ø,C9,43,4F,4D,5Ø,41,43,D4,7Ø4
1ØØ DATA 43,4F,4D,DØ,43,4D,5Ø,43,D4,ØØ,3E,Ø1,CD,ØE,BC,21,59D
11Ø DATA A5,92,CD,9C,92,21,E9,92,CD,9C,92,CD,ØØ,BB,CD,Ø6,924
12Ø DATA BB,FE,61,28,Ø6,FE,62,28,ØB,18,FØ,AF,32,DE,95,21,758
13Ø DATA 1Ø,93,18,Ø8,3E,Ø1,32,DE,95,21,11,93,CD,D4,BC,22,5EB
14Ø DATA ØA,93,79,32,ØC,93,DF,ØA,93,21,13,93,CD,D4,BC,22,6A9
15Ø DATA ØA,93,79,32,ØC,93,21,14,93,CD,D4,BC,22,ØD,93,79,647
16Ø DATA 32,ØF,93,21,D1,92,CD,9C,92,CD,ØØ,BB,CD,Ø6,BB,FE,867
17Ø DATA 64,28,Ø6,FE,73,28,24,18,F3,21,2Ø,93,22,1E,93,3E,53F
18Ø DATA C1,32,12,93,AF,32,15,93,21,ØØ,8Ø,22,17,93,21,32,4E1
19Ø DATA 8Ø,22,19,93,3E,Ø2,32,16,93,18,1F,21,88,94,22,1E,41D
2ØØ DATA 93,3E,41,32,12,93,3E,Ø2,32,16,93,32,15,93,21,ØØ,3FF
21Ø DATA 8Ø,22,17,93,21,32,8Ø,22,19,93,21,ØØ,8Ø,3A,DE,95,53B
22Ø DATA 5F,3A,15,93,57,3A,12,93,4F,Ø6,Ø4,E5,D5,C5,CD,C8,6E4
23Ø DATA 91,C1,D1,E1,ØC,24,24,1Ø,F2,3E,Ø1,CD,ØE,BC,2A,17,671
24Ø DATA 93,7E,FE,E5,CA,92,91,23,Ø6,Ø8,7E,C5,CD,5A,BB,C1,8F8
25Ø DATA 23,1Ø,F7,3E,2Ø,CD,5A,BB,Ø6,Ø3,7E,C5,CD,5A,BB,C1,759
26Ø DATA 23,1Ø,F7,3E,ØD,CD,5A,BB,3E,ØA,CD,5A,BB,2A,17,93,655
27Ø DATA Ø1,ØF,ØØ,Ø9,22,1C,93,2A,1C,93,23,22,1C,93,7E,32,367
28Ø DATA 1B,93,FE,E5,CA,92,91,B7,CA,92,91,2A,1C,93,ED,4B,933
29Ø DATA 19,93,7C,B8,C2,5C,91,7D,B9,CA,92,91,3A,1B,93,F5,88F
3ØØ DATA 3A,16,93,47,F1,B8,C2,7Ø,91,21,16,93,34,C3,37,91,71F
31Ø DATA CD,E2,91,2A,1C,93,3A,16,93,77,CD,5C,92,21,16,93,6F8
32Ø DATA 34,2A,1C,93,ED,4B,19,93,7C,B8,C2,37,91,7D,B9,C2,7A7
33Ø DATA 37,91,2A,17,93,Ø1,2Ø,ØØ,Ø9,7C,FE,88,28,ØA,22,17,433
34Ø DATA 93,Ø9,22,19,93,C3,FE,9Ø,21,ØØ,8Ø,3A,DE,95,5F,3A,6A2
35Ø DATA 15,93,57,3A,12,93,4F,Ø6,Ø4,E5,D5,C5,CD,CC,91,C1,7A1
36Ø DATA D1,E1,ØC,24,24,1Ø,F2,C9,DF,ØA,93,C9,DF,ØD,93,C9,85E
37Ø DATA 2A,1E,93,Ø6,ØØ,4F,Ø9,Ø9,56,23,4E,F5,3A,DE,95,5F,5ØA
38Ø DATA F1,C9,3A,16,93,CD,DØ,91,21,ØØ,88,CD,C8,91,3A,1B,7EF
39Ø DATA 93,CD,DØ,91,21,ØØ,8A,D5,C5,CD,C8,91,C1,D1,21,ØØ,8DF
4ØØ DATA 88,CD,CC,91,3A,16,93,CD,DØ,91,21,ØØ,8A,CD,CC,91,898
41Ø DATA 3A,16,93,CD,DØ,91,ØC,CD,4B,92,21,ØØ,88,CD,C8,91,796
42Ø DATA 3A,1B,93,CD,DØ,91,ØC,CD,4B,92,21,ØØ,8A,D5,C5,CD,7DE
43Ø DATA C8,91,C1,D1,21,ØØ,88,CD,CC,91,3A,16,93,CD,DØ,91,8CF
44Ø DATA ØC,CD,4B,92,21,ØØ,8A,CD,CC,91,C9,3E,CA,B9,28,Ø8,745
45Ø DATA 3E,4A,B9,CØ,14,ØE,41,C9,14,ØE,C1,C9,2A,19,93,22,5D1
46Ø DATA DF,95,2A,1C,93,22,E1,95,2A,E1,95,23,22,E1,95,ED,82D
47Ø DATA 5B,DF,95,7C,BA,2Ø,1A,7D,BB,2Ø,16,EB,Ø1,2Ø,ØØ,Ø9,5C2
48Ø DATA 22,DF,95,2A,E1,95,Ø1,1Ø,ØØ,Ø9,22,E1,95,7C,FE,88,6EA
```

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```
490 DATA C8,3A,16,93,BE,20,D1,3A,1B,93,77,C9,7E,B7,C8,CD,84C
500 DATA 5A,BB,23,18,F7,20,20,44,49,53,43,20,43,4F,4D,50,4F9
510 DATA 41,43,54,4F,52,20,20,42,59,20,50,2E,4B,2E,20,53,3DE
520 DATA 48,45,52,53,42,59,20,20,31,39,38,37,0A,0A,0A,0D,311
530 DATA 00,53,79,73,74,65,6D,20,6F,72,20,44,61,74,61,20,540
540 DATA 28,53,2F,44,29,20,0A,0D,00,20,20,43,6F,6D,70,61,37E
550 DATA 63,74,20,77,68,69,63,68,20,64,72,69,76,65,20,28,58C
560 DATA 41,2F,42,29,20,3F,20,0A,0D,00,00,00,00,00,00,00,171
570 DATA C1,C2,00,84,85,00,00,00,00,00,00,00,00,00,00,00,28C
580 DATA 00,C1,00,C3,00,C5,00,C7,00,C9,01,C2,01,C4,01,C6,628
590 DATA 01,C8,02,C1,02,C3,02,C5,02,C7,02,C9,03,C2,03,C4,638
600 DATA 03,C6,03,C8,04,C1,04,C3,04,C5,04,C7,04,C9,05,C2,648
610 DATA 05,C4,05,C6,05,C8,06,C1,06,C3,06,C5,06,C7,06,C9,658
620 DATA 07,C2,07,C4,07,C6,07,C8,08,C1,08,C3,08,C5,08,C7,660
630 DATA 08,C9,09,C2,09,C4,09,C6,09,C8,0A,C1,0A,C3,0A,C5,670
640 DATA 0A,C7,0A,C9,0B,C2,0B,C4,0B,C6,0B,C8,0C,C1,0C,C3,680
650 DATA 0C,C5,0C,C7,0C,C9,0D,C2,0D,C4,0D,C6,0D,C8,0E,C1,690
660 DATA 0E,C3,0E,C5,0E,C7,0E,C9,0F,C2,0F,C4,0F,C6,0F,C8,6A0
670 DATA 10,C1,10,C3,10,C5,10,C7,10,C9,11,C2,11,C4,11,C6,6A8
680 DATA 11,C8,12,C1,12,C3,12,C5,12,C7,12,C9,13,C2,13,C4,6B8
690 DATA 13,C6,13,C8,14,C1,14,C3,14,C5,14,C7,14,C9,15,C2,6C8
700 DATA 15,C4,15,C6,15,C8,16,C1,16,C3,16,C5,16,C7,16,C9,6D8
710 DATA 17,C2,17,C4,17,C6,17,C8,18,C1,18,C3,18,C5,18,C7,6E0
720 DATA 18,C9,19,C2,19,C4,19,C6,19,C8,1A,C1,1A,C3,1A,C5,6F0
730 DATA 1A,C7,1A,C9,1B,C2,1B,C4,1B,C6,1B,C8,1C,C1,1C,C3,700
740 DATA 1C,C5,1C,C7,1C,C9,1D,C2,1D,C4,1D,C6,1D,C8,1E,C1,710
750 DATA 1E,C3,1E,C5,1E,C7,1E,C9,1F,C2,1F,C4,1F,C6,1F,C8,720
760 DATA 20,C1,20,C3,20,C5,20,C7,20,C9,21,C2,21,C4,21,C6,728
770 DATA 21,C8,22,C1,22,C3,22,C5,22,C7,22,C9,23,C2,23,C4,738
780 DATA 23,C6,23,C8,24,C1,24,C3,24,C5,24,C7,24,C9,25,C2,748
790 DATA 25,C4,25,C6,25,C8,26,C1,26,C3,26,C5,26,C7,26,C9,758
800 DATA 27,C2,27,C4,27,C6,27,C8,02,41,02,43,02,45,02,47,4C8
810 DATA 02,49,03,42,03,44,03,46,03,48,04,41,04,43,04,45,240
820 DATA 04,47,04,49,05,42,05,44,05,46,05,48,06,41,06,43,250
830 DATA 06,45,06,47,06,49,07,42,07,44,07,46,07,48,08,41,260
840 DATA 08,43,08,45,08,47,08,49,09,42,09,44,09,46,09,48,270
850 DATA 0A,41,0A,43,0A,45,0A,47,0A,49,0B,42,0B,44,0B,46,278
860 DATA 0B,48,0C,41,0C,43,0C,45,0C,47,0C,49,0D,42,0D,44,288
870 DATA 0D,46,0D,48,0E,41,0E,43,0E,45,0E,47,0E,49,0F,42,298
880 DATA 0F,44,0F,46,0F,48,10,41,10,43,10,45,10,47,10,49,2A8
890 DATA 11,42,11,44,11,46,11,48,12,41,12,43,12,45,12,47,2B0
900 DATA 12,49,13,42,13,44,13,46,13,48,14,41,14,43,14,45,2C0
910 DATA 14,47,14,49,15,42,15,44,15,46,15,48,16,41,16,43,2D0
920 DATA 16,45,16,47,16,49,17,42,17,44,17,46,17,48,18,41,2E0
930 DATA 18,43,18,45,18,47,18,49,19,42,19,44,19,46,19,48,2F0
940 DATA 1A,41,1A,43,1A,45,1A,47,1A,49,1B,42,1B,44,1B,46,2F8
950 DATA 1B,48,1C,41,1C,43,1C,45,1C,47,1C,49,1D,42,1D,44,308
960 DATA 1D,46,1D,48,1E,41,1E,43,1E,45,1E,47,1E,49,1F,42,318
970 DATA 1F,44,1F,46,1F,48,20,41,20,43,20,45,20,47,20,49,328
980 DATA 21,42,21,44,21,46,21,48,22,41,22,43,22,45,22,47,330
990 DATA 22,49,23,42,23,44,23,46,23,48,24,41,24,43,24,45,340
1000 DATA 24,47,24,49,25,42,25,44,25,46,25,48,26,41,26,43,350
1010 DATA 26,45,26,47,26,49,27,42,27,44,27,46,27,48,00,00,2F7
1020 DATA end
```

Custom beep

Here's a fascinating routine from **David Hanney** of Winchester that alters the error beep – that annoying sound your computer makes when it encounters an error. The harsh beep can be changed to something more soothing, a rasping noise or even an explosion.

Lines 60 to 130 hold the sound data. If you're not sure how to use ENT or ENV have a look at the User Instructions – all is explained there.

```
1 ' Custom beep
2 ' by David Hanney
3 ' Amstrad Action  May 88
10 PRINT CHR$(7) ' standard sound
20 FOR t=0 TO 28:READ a$
30 POKE &BE80+t,VAL("&"+a$):NEXT:CALL &BE80
40 DATA CD,B1,BB,11,16,00,19,36,8D,23
50 DATA 36,BE,C9,21,94,BE,CD,AA,BC,C9
```

Fame and fortune

Interested? Yes? Well, if you send us your programming masterpieces and they subsequently get published in these pages, you could stand to win £100. And your name would be seen by thousands of Amstrad addicts. What more could you ask for? Every person whose listing appears in the Type-Ins section is guaranteed anything from £10 to £100. What's the catch? None. We simply want your listings. Send them – together with your name, address and a jiffy bag (for return) – to **"Type-Ins", Amstrad Action, Future Publishing Ltd, 4 Queen Street, Bath, BA1 1EJ**.

If you plan to send a listing to be considered for publication, here are a few pointers:

- Make sure it's your own original, unpublished work.
- Use lower-case rather than capitals for variable names.
- REM statements make the program easier to understand.
- Do not use letters that look like numbers as variable names (O and Ø, l and 1 for example).
- Structure your program – divide it into sensible procedures.
- Avoid long multi-statements. Short lines make debugging easier.
- Please make sure your name and address is on every slip of paper, cassette or disk that you send us

```
60 ENV 1,15,-1,10:ENT -1,10,-2,1,10,2,1 ' envelopes
70 DATA 87 ' channels
80 DATA 01 ' volume envelope used
90 DATA 01 ' tone envelope to use
100 DATA 50,00 ' tone
110 DATA 00 ' noise
120 DATA 0F ' initial volume
130 DATA 96,00 ' duration
140 PRINT CHR$(7) ' new sound
```

Transform

The **Britz**'s from Denmark have clubbed together to produce a handy listing for converting numbers into their written equivalents. This is a useful learning aid for any youngster getting to grips with the decimal number system.

When prompted enter any number between Ø and 9999. If you enter a value between Ø and 3999 the Roman translation, along with the written equivalent, will be displayed.

```
1 ' Transform
2 ' by T & D Britz
3 ' Amstrad Action  May 88
10 DEFINT a-z:MODE 2:PEN 1,1:LOCATE 35,1:PRINT"TRANSFORM"
20 LOCATE 35,1:PRINT "_________":PEN 1,0:LOCATE 1,20
30 LOCATE 24,3:PRINT"ENTER A NUMBER LESS THAN 10000
40 LOCATE 19,4:PRINT"IF THE NUMBER SUPPLIED IS LESS THAN 4000
50 LOCATE 20,5:PRINT"ITS ROMAN EQUIVALENT WILL BE DISPLAYED
60 PRINT:PRINT:INPUT num$
70 GOSUB 90:GOSUB 270:GOSUB 520:RUN
80 ' Roman numerals conversion routine
90 word$="":n$(1)="M":n$(2)="C":n$(3)="X":n$(4)="I"
100 ad$(2)="CM":ad$(3)="XC":ad$(4)="IX":su$(2)="CD"
110 su$(3)="XL":su$(4)="IV":o$(2)="D":o$(3)="L":o$(4)="V"
120 IF VAL(num$)>3999 THEN RETURN
130 keep$=num$
140 ON LEN(num$) GOTO 180,170,160,150
150 pl=1:GOSUB 240                     ' 1000's
160 GOSUB 250:pl=2:GOSUB 210           ' 100's
170 GOSUB 250:pl=3:GOSUB 210           ' 10's
180 GOSUB 250:pl=4:GOSUB 210           ' 1's
190 q=LEN(word$):LOCATE 39-(q/2),10:PRINT word$:num$=keep$
200 RETURN
210 IF MID$(num$,pl,1)="9" THEN word$=word$+ad$(pl):RETURN
220 IF MID$(num$,pl,1)="4" THEN word$=word$+su$(pl):RETURN
230 IF VAL(MID$(num$,pl,1))>4 THEN word$=word$+o$(pl)+
```

```
    STRING$(VAL(MID$(num$,pl,1))-5,n$(pl)):RETURN
240 word$=word$+STRING$(VAL(MID$(num$,pl,1)),n$(pl)):RETURN
250 num$=STRING$(4-LEN(num$)," ")+num$:RETURN
260 ' Number-in-words routine
270 word$="":RESTORE 470:FOR a=Ø TO 9:READ odi$(a):NEXT
280 FOR a=Ø TO 9:READ teen$(a):NEXT:FOR a=2 TO 9
290 READ tens$(a):NEXT
300 IF VAL(num$)>9999 THEN GOSUB 530:RETURN
310 IF VAL(num$)=Ø THEN count=1:GOTO 420
320 IF LEN(num$)=1 THEN count=1:GOTO 420 ELSE count=Ø
330 IF LEN(num$)=2 THEN 400
340 word$=word$+odi$(VAL(LEFT$(num$,1)))
350 IF LEN(num$)=3 THEN word$=word$+" HUNDRED ":GOTO 380
360 word$=word$+" THOUSAND "
370 IF MID$(num$,2,1)<>"Ø" THEN word$=word$+odi$(VAL(MID$
    (num$,2,1))):word$=word$+" HUNDRED "
380 IF MID$(num$,LEN(num$)-1,1)="Ø" AND MID$(num$,
    LEN(num$),1)="Ø" THEN GOTO 450
390 word$=word$+"AND "
400 IF MID$(num$,LEN(num$)-1,1)="Ø" THEN GOTO 420
410 IF MID$(num$,LEN(num$)-1,1)="1" THEN word$=word$+teen$
    (VAL(MID$(num$,LEN(num$),1))):GOTO 450 ELSE
    word$=word$+tens$(VAL(MID$(num$,LEN(num$)-1,1)))
420 IF VAL(num$)=Ø THEN word$="NOUGHT":GOTO 440
430 word$=word$+odi$(VAL(MID$(num$,LEN(num$),1)))
440 IF count=Ø THEN GOSUB 460
450 LOCATE 39-(LEN(word$)/2),12:PRINT word$:RETURN
460 IF MID$(num$,LEN(num$),1)="Ø" AND MID$(num$,LEN
    (num$)-1,1)<>"Ø" AND MID$(num$,LEN(num$)-1,1)<>"1"
    THEN word$=LEFT$(word$,LEN(word$)-1)
470 DATA "",ONE,TWO,THREE,FOUR,FIVE,SIX,SEVEN,EIGHT,NINE
480 DATA TEN,ELEVEN,TWELVE,THIRTEEN,FOURTEEN,FIFTEEN,SIXTEEN
490 DATA SEVENTEEN,EIGHTEEN,NINETEEN,TWENTY-,THIRTY-,FORTY-
500 DATA FIFTY-,SIXTY-,SEVENTY-,EIGHTY-,NINETY-
510 RETURN
520 LOCATE 32,20:PRINT"PRESS ANY KEY":CALL &BB18:RETURN
530 PRINT CHR$(7):LOCATE 34,20:PRINT "TOO BIG!"
540 FOR T=Ø TO 1ØØØ:NEXT:RETURN
```

Wavy

Remember **Peter Featherstone**'s Spheriscreen type-in published in issue 27? If you decided to enter the program, you would have discovered that you could distort standard screens in many wonderful ways. The limiting factor being speed; you could wait anything up to 2Ø minutes for a screen to be completely modified.

Gorilla, often seen swinging from ship masts in Hull, has sent in a routine that will bend the screen in real time. Gorilla's program has to be seen to be believed. The distortions take place unbelievably quickly. But unlike Peter's routine, Wavy accesses the screen handling chip. It works by fooling the chip into displaying the screen at different times when writing the frame.

The listing supplies three bar or RSX commands:



|SCRCURVE – turns the routine on.
|CURVE,a,b,c,d,e – curves the screen by a specified amount.
|SCRCOFF – turns the routine off.



Lines 9Ø to 15Ø demonstrate the best way of using the bar commands. To distort one of your screens simply add an extra line:

```
95 MODE Ø:INK 1,6:INK
6,7:LOAD"filename",&CØØØ
```

```
1 ' Wavy
2 ' by Gorilla
3 ' Amstrad Action  May 88
10 x=1010:MEMORY &A1FF:FOR
a=&A200 TO &A2DB STEP
10:cs=0
20 FOR b=0 TO 9:READ z$:z=VAL("&"+z$):POKE(a+b),z:cs=cs+z
30 NEXT b:READ cs2
40 IF cs2<>cs THEN PRINT"error in line ";x:END
50 x=x+10:NEXT
60 CALL &A200:REM Initialise rsx
70 PRINT "|SCRCURVE, |CURVE and |SCRCOFF active"
80 PRINT:INPUT"RUN DEMO";a$:IF a$="y" THEN 90 ELSE END
90 |SCRCURVE:REM turn on
100 z=0:REM offset on screen
110 FOR num=1 TO 3:FOR y=1 TO 4:GOSUB 130:NEXT
120 FOR y=4  TO 1 STEP -1:GOSUB 130:NEXT y,num:|SCRCOFF:END
130 FOR x=0 TO 360 STEP 30:a=z+y*SIN(x)
140 b=z+y*SIN(x+90):c=z+y*SIN(x+180):d=z+y*SIN(x+270)
150 |CURVE,a,b,c,d,z:NEXT x:RETURN
160  DATA 21,ØA,A2,Ø1,ØE,A2,CD,D1,BC,C9, 1185
170  DATA ØØ,ØØ,ØØ,ØØ,19,A2,C3,2E,A2,C3, 785
180  DATA A9,A2,C3,95,A2,53,43,52,43,55, 1221
190  DATA 52,56,C5,43,55,52,56,C5,53,43, 1Ø32
200  DATA 52,43,4F,46,C6,ØØ,21,47,A2,11, 779
210  DATA 5B,A2,Ø1,ØØ,81,CD,D7,BC,21,51, 11Ø5
220  DATA A2,11,61,A2,Ø1,ØØ,81,CD,EØ,BC, 1185
230  DATA C9,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ, 2Ø1
240  DATA ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ,ØØ, Ø
250  DATA ØØ,AF,32,6Ø,A2,C9,ØØ,F3,3A,6Ø, 1Ø81
260  DATA A2,3C,32,6Ø,A2,FE,Ø1,2Ø,Ø4,3E, 883
270  DATA 2E,18,1A,FE,Ø2,2Ø,Ø4,3E,2D,18, 519
280  DATA 12,FE,Ø3,2Ø,Ø4,3E,2E,18,ØA,FE, 7Ø7
290  DATA Ø4,2Ø,Ø4,3E,2D,18,Ø2,3E,2D,Ø1, 281
300  DATA Ø2,BC,ED,49,Ø4,ED,79,FB,C9,F3, 1557
310  DATA 3E,2E,CD,8B,A2,21,47,A2,CD,DD, 13Ø6
320  DATA BC,21,51,A2,CD,E6,BC,FB,C9,FE, 1793
330  DATA Ø5,CØ,DD,7E,ØØ,C6,2E,32,6E,A2, 111Ø
340  DATA DD,7E,Ø2,C6,2E,32,76,A2,DD,7E, 127Ø
350  DATA Ø4,C6,2E,32,7E,A2,DD,7E,Ø6,C6, 1137
360  DATA 2E,32,86,A2,DD,7E,Ø8,C6,2E,32, 1Ø41
370  DATA 8A,A2,C9,E3,F3,83,33,33,33,89, 1392
```



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Steve's Services is proud to present Find'A'Word. The only playable wordsearch creating program for the Amstrad CPC range of home computers. Only £9.95 on disc or £7.95 on tape. Also available hardware from extension cables to second disc drives. Send a SAE for further details. Steve's services, 40 Finmere, Bracknell, Berks, RG12 4WF. Tel: (0344) 425766 for enquiries.

Colour 464, software, joystick, dust covers, desk, manual, books. £300.00. B Humphrey, 10 School Close, Braunston, Daventry, Northants, NN11 7JD. Telephone 890840.

Database and word processor CPC6128 only. These are real quality programs. Database takes 64K data in RAM. Includes AA part index as demo. Word processor has many powerful features and will print pages for your personal organiser. Plus Printcat File Directory, automatically printed as disc inlay cards. Together on disc for £10. Alan Sharp, 73 Manor Avenue, Aberdeen, AB2 7UT.

Amstrad CPC664 + 64K ram + speech + Amdrum + printer + modem + RS232C + cassette + joystick + monitor + tons of software inc CPM+ utilities, discs + books + disc box + cassettes, every possible extra, worth £1000+, yours for £500. Tel: 0255 880871.

Amstrad CPC 464 with colour monitor over £800 software, joystick complete collection of AA rave and Amtix and modem. £250. D Smith, 55 Chester Road, Edmonton, London N9 8JH. Te; 01-807 2462 anytime.

Duneworld – A strategy wargame set in the future. Battle the evil Baron and keep your population happy. Cheques/POs for £1.99 to DER, 13 Latham Street, Preston, PR1 3TE. (Cassette only).

CPC 6128 disk package, contains database with search and print facility, basic word processor, calculator and accounts program. Suit both personal/business user. £14. M Monroe, 107 Webb Rise, Stevenage, Herts.

Protext (CPC version) disk £17.00, Prospell disc £13.00. Originals, full documentation, excellent condition. Reason for sale: Upgrading to CP/M version. Phone Cambridge (0223) 316588.

Colour CPC 6128, Multiface II, new cassette recorder, £600+ of software (games and utilities tape and disk), 18 books, 80 magazines. Total RRP £1300+. Sell for £400. Telephone Liss 892307 after 5pm.

5 1/4 inch megadrive, including stripped down Amram1, software, instructions, £120. AMX Mouse MK III plus STOP PRESS, plus EXTRA-EXTRA, £75. PROTEXT rom, £22.95. RODOS rom £19.95, DK tronics 64K ram extension plus 64K silicon disc, £20. Mr R V Huxtable, 15 Pallett Hill, Catterick Village, North Yorkshire, DL10 7NT. Tel: 0748 818450.

Phantasy Quest Part 1 for CPC 464. Text only adventure game. Send £4.00 to A Cook at 19 Cullen Drive, Glenrothes, Fife, KY6 2JH or phone (0592) 755999 and ask for Aaron.

Amstrad 464/664/6128 books for sale at half cost price. Send SAE for more details to Mr R E Beeston, 90 Penfillia Road, Brynhyfryd, Swansea SA5 9HS. All letters answered.

Blank Amsoft 3" discs in cases. 5 for £12.00, 10 for £21.95. Send cheques/POs made payable to First Byte Software to PO Box 50, Yeovil, Somerset. BA20 1XS. Tel: 0935 851265

WANTED

Wanted for CPC6128 DK 'tronics 256K silicon disc, Siren eprom programmer, Z Basic, Maxam on eprom. M J Fletcher, 1 Hungerford Drive, Maidenhead, Berks. SL6 7UT. Tel (0628) 36227.

SERVICES

Tape-to-disc conversions 464/6128: send original tape(s) plus a disc & 95p per tape (max 6 tape per disc) and we will transfer them to disc. Compilation tapes 85p each game. If you want the tapes returned add 30p per tape to the total cost. State whether 464/6182. D.R Hudson, 1 Chynoweth, Stenalees, ST Austell, Cornwall. PL25 4AW. Tel: 0726 850458

OTHER

Penpal wanted. I own an Amstrad CPC 464 and Sega. I am interested in playing games and programming. please write to Christian Capstaff, 8 Apsley Road, Great Yarmouth, Norfolk. NR30 2HG.

This section of the magazine offers you the chance to speak directly to the huge waiting world of CPC owners — or would-be owners. Users report good results.

You can place an ad of up to 30 words for just £5. So you could use it to sell a printer or launch a user group or publicize a piece of software you've written.

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The AA Buyers Guide
Top 20 Peripherals

This month we recommend the top 20 peripherals to enhance the capabilities of your CPC. It's not an exhaustive list of what's available, but add-ons that we've looked at and found to be worthwhile in terms of usefulness and price.

Amdrum

Cheetah Marketing, £34.95 - reviewed issue 13

A drum machine that can be attached to a CPC. It comes with 8 digitally recorded drum sounds with the option of adding other drum noises (Latin, Electro and Afro currently available). The sounds can be created in real time or programmed for use at a later date. Plugs into the Amstrad with an output socket for connection to a Hi-fi.



Electric Studio Pen

Electric Studio, £19.95 tape, £29.95 disk

The light pen can be used with either green or colour monitors. It plugs into the expansion port. The software, a graphics design package, makes extensive use of the light pen. Options are selected with the pen, lines are drawn with the pen, and so on. Wherever the pen is moved on the screen, a cursor will follow it. Powerful commands exist to create shapes, fill areas, spray sections and dump screens to printer.

Rombo Romboard

Rombo Productions, £34.95 - reviewed issue 10

Has a good length of ribbon cable between the box and the edge-connector which means it fits any CPC. Houses up to eight roms with the possibility of daisy-chaining a further board. Individual roms can be turned on or off via a set of dip switches. Stylish, easy to use and has a through connector for additional peripherals.

Vidi Digitizer

Rombo Productions, £89.95 - reviewed issue 15

This clever add-on can capture real images via a video camera or video recorder, and reproduce them on your computer's screen. Once the pictures have been scanned, they can be tidied up from within an art package, used in animation sequences or ported into a desktop publishing program like *Stop Press*. The possibilities are endless and the results spectacular.

64k Expansion Ram

Ram Electronics, £44.95 - reviewed issue 4

464 and 664 owners can give their machine the same amount of memory as a standard 6128 with this device – 128k. 6128 owners can boost their computers to 192k. The ram pack is of most use to 464 and 664 users as many programs needing 128k (*Advanced Art Studio*, *Stop Press* and *Meltdown*, for instance) can be used when it's plugged in. CPM Plus, and the many programs that run under the operating system, can also be used.

256k Silicon Disk

Ram Electronics, £89.95 - reviewed issue 8

Can be used as a second or third disk drive. The silicon disk behaves in an identical manner to an ordinary drive, but is extremely fast as it doesn't have any mechanical parts. It uses memory; 256k of it. Works with Amsdos, CPM 2.2 and CPM Plus. Both 464 and 6128 models available.



Music Machine

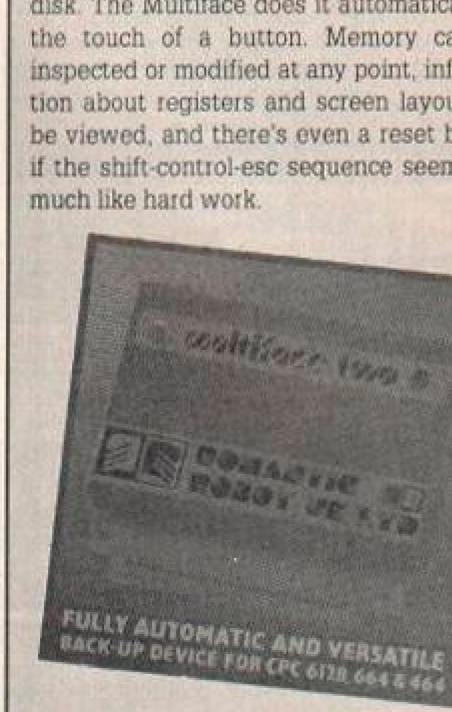
Ram Electronics, £49.95 tape, £59.95 disk - reviewed issue 17

For sampling sounds this is the machine. Not only can it grab everyday sounds and play them back through the CPC, but it has a comprehensive selection of Midi ports and software for creating compositions. Comes with a suite of sampled drum sounds.

Multiface II

Romantic Robot, £39.88

The essential peripheral for anyone considering transferring tape-based software to disk. The Multiface does it automatically at the touch of a button. Memory can be inspected or modified at any point, information about registers and screen layout can be viewed, and there's even a reset button if the shift-control-esc sequence seems too much like hard work.



Sound Blaster

Siren Software, £29.99 - reviewed issue 23

This device boosts the Amstrad's sound capabilities by several watts. Twin three-way car speakers plus amplifier can really pile on the decibels. Individual volume and level control for fine tuning, headphones for personal listening and superb output – brings games to life.

MicroStuffer

Frontier Software, £49.95 - reviewed issue 23

When printing long documents, the computer freezes until the process is over. This can be annoying not to mention time consuming. The MicroStuffer, a 64k printer buffer, unjams traffic by retaining data (four screen dumps or roughly 40 pages worth of text) en-route to the printer until it is required.

AMX Mouse

Advanced Memory Systems, £69.99 – reviewed issue 3

An alternative method of input; the mouse. It's basically an upside-down trackball with three push-buttons. The package comes with Art and Control programs. Art is a graphic package which shows just how user-friendly the mouse can be. Control demonstrates how a mouse environment can be installed in your own programs.

Teletext Adaptor and Tuner

Microtext, £114.80 – reviewed issue 27

With the adaptor and tuner it is possible for the Amstrad to receive teletext frames; Oracle and Ceefax. If you have a video recorder then only the adaptor (£74.95) is needed.



DDI-1 Disk Drive

Amstrad, £159.95

The very necessary peripheral for 464 owners wishing to upgrade to a disk-based system. Consists of an interface (containing the Amsdos disk operating system) and a compact three-inch disk drive.

8-bit Printer Port

KDS Electronics, £19.55

This plugs into the printer port. It gives the CPC 8-bit printing facilities. For instance, characters above Ascii 127 can be accessed and printer dumps are devoid of ugly blank lines running through them.

Dart Scanner

Dart Electronics, £79.95 – reviewed issue 22

Using a combination of printer, hardware and software it is possible to read images (photographs or magazine clippings) and store them in the CPC computer. The scanner head is attached to a printer – must be the Amstrad DMP 2000, 3000 or 3160 – and a picture fed through. The picture is then reproduced on the Amstrad screen as a two-tone image (black and white).

Red Boxes

General Information System, £129 – reviewed issue 17

These add-ons can automate abodes. They can be used to turn lights on and off, limit the kids' TV viewing, detect intruders and many other clever tasks. The boxes are programmed via the CPC's printer port and then plugged into the mains. Once programmed they send signals, which perform various tasks, to one another via the mains. Ideal for making the central heating come on more often during weekends, causing appliances to switch on or off and so on.

Buffer Upgrade Kit

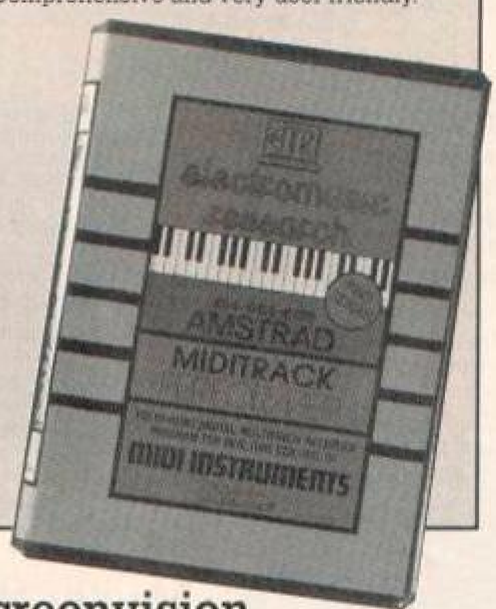
Goldmark Systems, £6.50 – reviewed issue 19

With this upgrade kit it is possible to increase the measly 2k of ram contained in Amstrad's DMP 2000, 3000 and 3160 to 8k. This means the computer won't hang up for such a long time while data is being sent to the printer. The upgrade can be done by you or by a local TV repairman in about 10 minutes. It entails removing one chip and replacing it with another. And, depending on the model of your printer, a drop of solder may also be necessary.

Miditrack Performer

EMR, £129.85 – reviewed issue 26

The package comprises a Midi interface (for connecting to Midi instruments, such as, synthesizers and guitars) with Clock, Midi-in and Midi-out ports and control software. The software enables composing and editing on up to eight tracks. Comprehensive and very user friendly.



Screenvision

Screens, £64.95 – reviewed issue 16

A TV tuner which, when added to an Amstrad machine, will enable the monitor to be used as a standard television. Those with colour monitors will receive colour pictures. Green screens still show shades of green. Controls exist for brightness, colour, contrast and volume. There are eight channels to choose from. If there isn't a TV license in the house, then one will be needed.

RS232C Serial Interface

Amstrad/Pace, £59.95

Comes with the Commstar communications rom which is perfect for getting on line to bulletin boards and mailboxes (Prestel and Micronet, for example). The interface has a port enabling virtually any modem to connect to an Amstrad computer.

Contacts

Advanced Memory Systems ☎ 0925 413501
166/170 Wilderspool Causeway, Warrington, WA4 6QA

Amstrad ☎ 0277 228888
169 King's Road, Brentwood, Essex, CM14 4EF

Cheetah Marketing ☎ 0222 555525
Norbury House, Norbury Road, Fairwater, Cardiff, CF5 3AS

Dart Electronics 0502 513707
Unit B5, Oulton Works, School Road, Lowestoft, Suffolk, NR33 9NA

Electric Studio ☎ 0462 420222
Unit 8, Cam Centre, Wilbury Way, Hitchin, SG4 0TW

EMR ☎ 0702 335747
14 Mount Close, Wickford, Essex, 8HG

Frontier Software ☎ 0423 67140
PO Box 113, Harrogate, N Yorkshire, HG2 0BE

General Information Systems ☎ 0480 87464
Croxton, Cambridgeshire, PE19 4SY

Goldmark Systems ☎ 07072 71529
51 Comet Road, Hatfield, Herts, AL10 0SY

KDS Electronics ☎ 04853 2076
15 Hill Street, Hunstanton, Norfolk, PE36 5BS

Microtext ☎ 0705 595694
7 Birdlip Close, Horndean, Hants, PO8 9PW

Ram Electronics ☎ 0252 850085
Unit 16, Redfields Industrial Park, Redfield Lane, Church Crookham, Aldershot, Hants, GU13 0RE

Romantic Robot ☎ 01 2008870
15 Hayland Close, London, NW9 OLH

Rombo Productions ☎ 0506 39046
107 Raeburn Rigg, Livingston, EH54 8PH

Screens ☎ 09274 20664
Main Avenue, Moor Park, Northwood, Middlesex

Siren Software ☎ 061 2281831
2-4 Oxford Road, Manchester M1 5QE

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• AA Rave - May '88 issue



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• AA Rave from Ocean.

• Superb, even faster, more capsules, more response

• *Breakout* clone of course!

•64 screens to bust your way through!

• The ultimate in clean lean entertainment.

• Be a star!

• Reviewed May '88 issue

• Going going gone!



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• From Taito, the coin-op sucess of the moment!

• Pure thrills'n spills as you bounce around the screen!

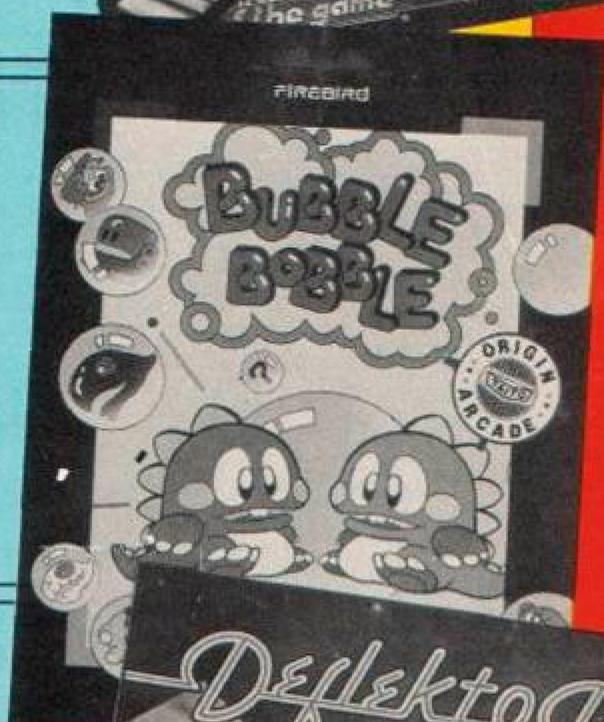
• AA Rave from Firebird

• Over 100 levels

• Simultaneous two-player option

• Blow bubbles, eat fruit and bash monsters!

• Why not?



DEFLEKTOR

Normal shop price £9.99 cass, £14.99 disk

• AA Mastergame from Vortex

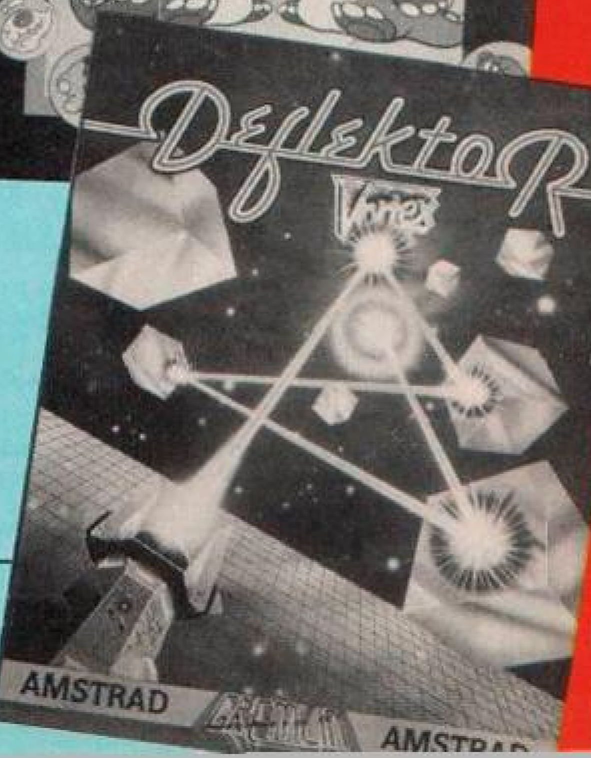
• A game of fast, logical thought

• Destroy the cells dotted round the screen with a laser

• Then line the beam up on a receiver.

• Your mind will be fried before you get there!

• Gremlins won't let you get away lightly! 90% in AA March 1988





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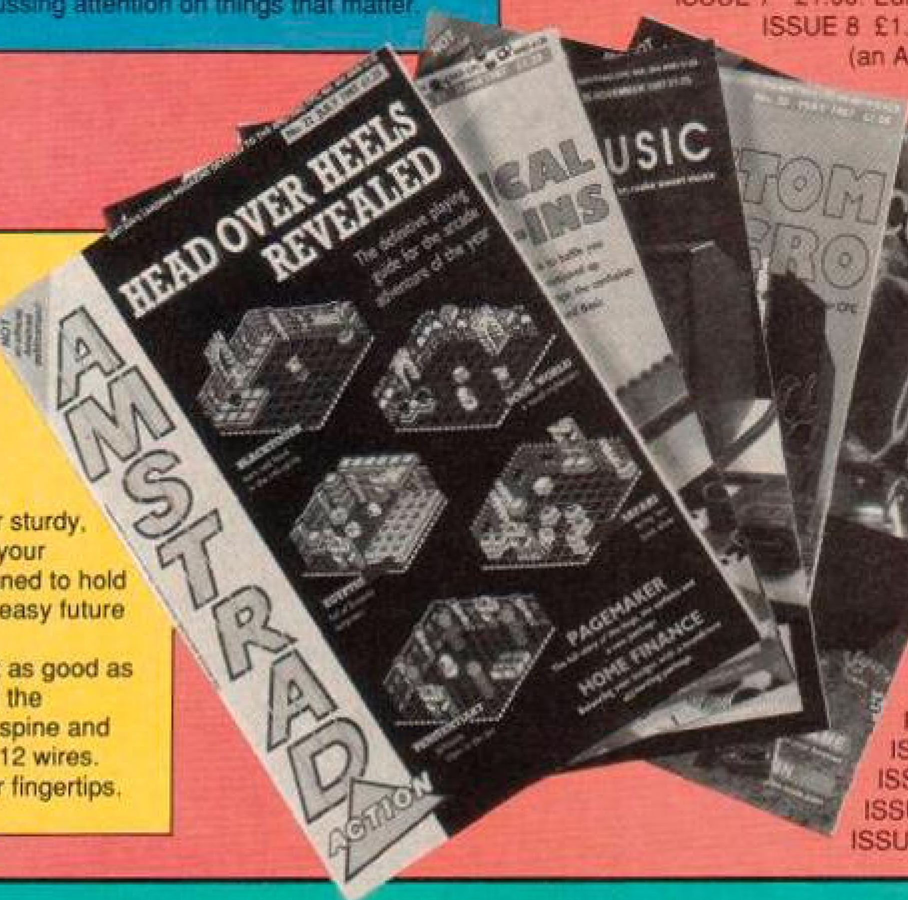
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Issues 8 and 16 may be of particular interest, as both
software. Two series also went down very well. Andrev
absolute beginners ran from issues 8-17, while a series
ran from 10-17. All issues contain numerous game rev

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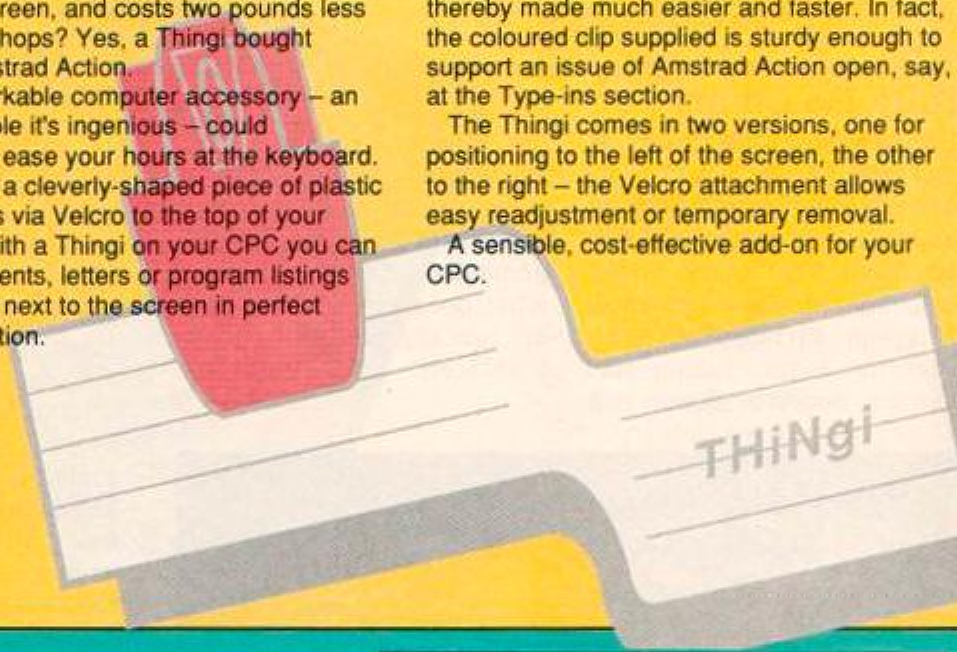
What's white, dangles paper next to your computer screen, and costs two pounds less than in the shops? Yes, a Thingi bought through Amstrad Action.

This remarkable computer accessory – an idea so simple it's ingenious – could dramatically ease your hours at the keyboard. It's basically a cleverly-shaped piece of plastic that attaches via Velcro to the top of your micro. But with a Thingi on your CPC you can have documents, letters or program listings clipped right next to the screen in perfect reading position.

Any task involving copying off paper is thereby made much easier and faster. In fact, the coloured clip supplied is sturdy enough to support an issue of Amstrad Action open, say, at the Type-ins section.

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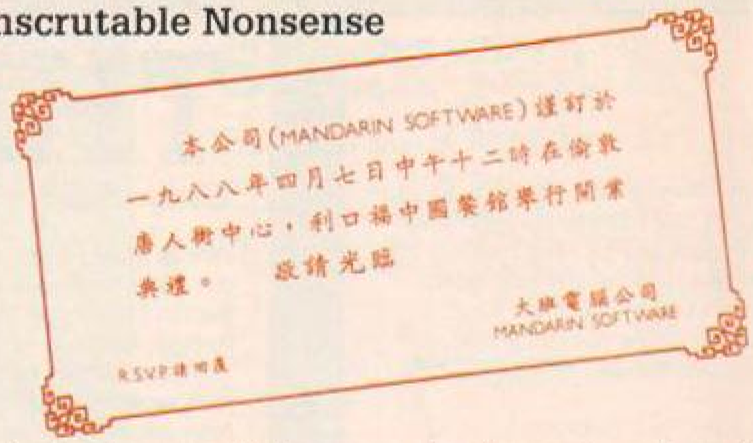
A sideways look at the world of computing, plus Sugarman!

Tally-Ho Chaps

Accompanying the photo of Reckless Roger and his Spowith Pup (Camel?), was an invitation to go flying with Activision. This journo junket included simulator practice, flying an aircraft and lunch **after** the flight. Taking into account Reckless Roger and the fact that the antiquated machinery is bolted to the floor – we reckon lunch might be spoiled by yo-yoing breakfast. Remember the old saying – what goes down, must come up (usually upside down at 5,000 feet).



Inscrutable Nonsense



本公司(MANDARIN SOFTWARE)謹訂於
一九八八年四月七日中午十二時在倫敦
唐人街中心，利口福中國餐館舉行開業
典禮。　敬請光臨

大陸電腦公司
MANDARIN SOFTWARE

R.S.V.P 請回覆

Software houses will do anything to get a bit of publicity – witness this little number from newly formed Mandarin. Now we know it's an event and it takes place at midday, on the 7th of April and it might have something to do with the city center and the Chinese Embassy. While marvelling at Mandarin's linguistic skills, we feel there's going to be rather a small turnout for whatever it is they had in mind.

Also having trouble with communication are Martech, who have released a phone number in connection with their game *Vixen*. If you dial the number you'll hear the dulcet tones of Corrinne Russell, who appears on the game adverts. The poor lady is obviously having a terrible time – judging from all the panting and rustling that goes on. We would print the number concerned but our pet chimp has just pinched the bit of paper which it's on, and is turning it into origami underwear.

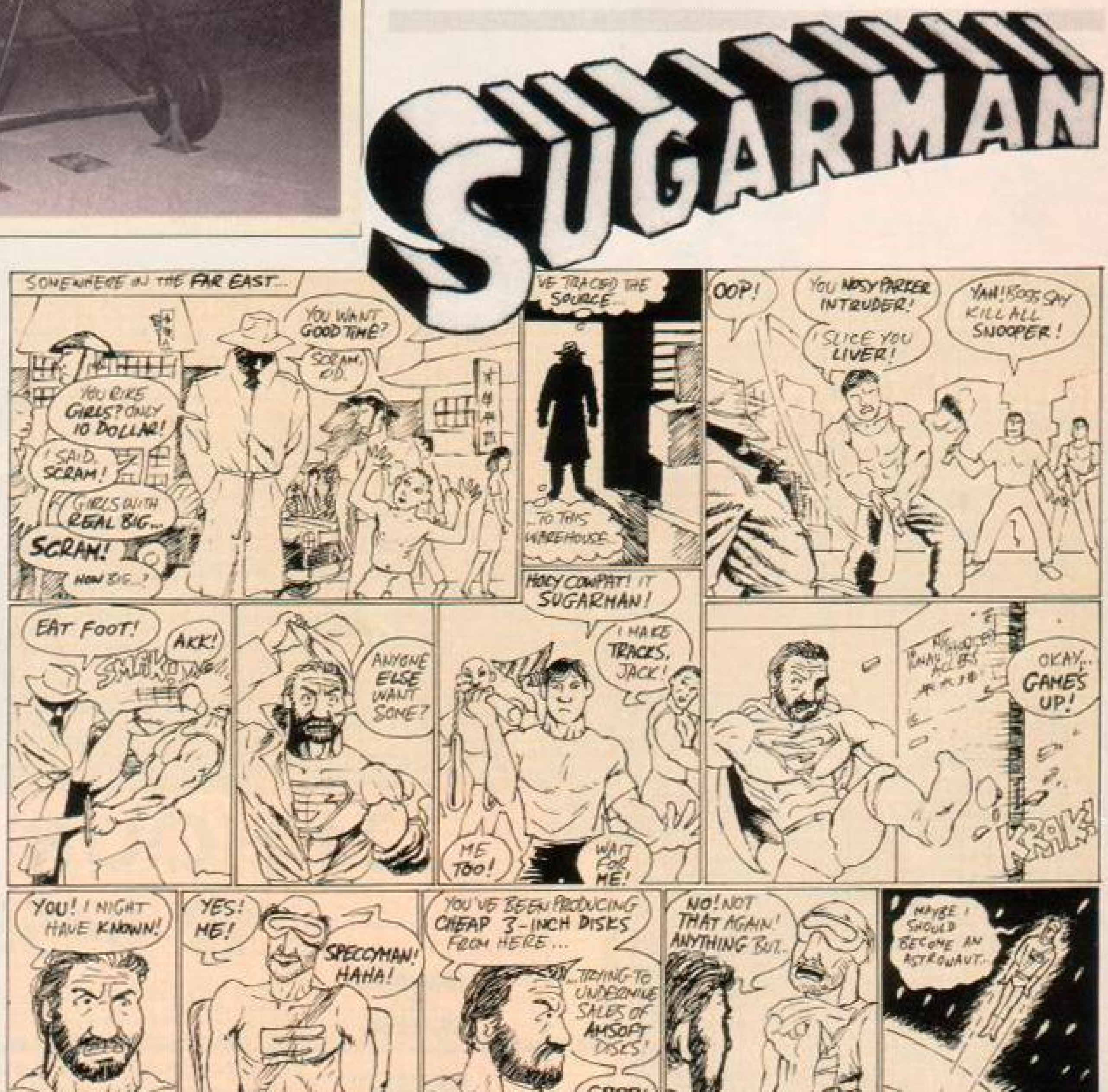
Horoscope

AA's monthly honest horoscope for CPC users



Taurus (Apr 20-May 20)

You are currently using your seventh 6128 because you refuse to believe that tapes won't fit in the disk drive. The staff of the local computer store laugh at you behind your back. They take great delight in selling you ZX81 tapes that they swear will run on an Amstrad. You enjoy pinning people to the wall and talking to them about comms software until their ears bleed. You have a big ring in your nose. You have a one track mind, which is used by a family of badgers and a deer.



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In the knife-edge world of the vigilante there is no place to rest, no time to think — but look sharp — there is always time to die! You will encounter the disciples of evil who's mission it is to exterminate the only man on earth who dares to throw down the gauntlet in their path — the Renegade. PLAY RENEGADE...PLAY MEAN!

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IK+

They called International Karate 'the greatest Karate beat 'em up yet' (Commodore User). And who are we to argue? But ARCHER MACLEAN has come up with a stunner: A third fighter. An amazing animated background. New moves (including double head-kick and a spectacular backflip). Re-mixed music by ROB HUBBARD. And balls!

© 1987 Archer Maclean © 1987 System 3 Software Ltd.

SUPER SPRINT

Licensed from Atari Games' original money-spinning coin-op, one or two players compete head-to-head over eight gruelling tracks and four levels of game difficulty. Avoid the hazards and collect golden spanners to enhance custom car features — the key to Super Sprint. With detailed animation and sound effects, Super Sprint brings the best driving excitement ever to be experienced on home computers.

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RAMPAGE

The game where the nice guys don't get a look in. Grab your way through Chicago, punch up New York, and jump on San Francisco. Three indescribably nasty characters which bear a remarkable likeness to King Kong, Godzilla and Wolf-man, need you to send them on a rampage in an enduring 150 days of destruction, through 50 different cities.

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BARBARIAN

THE STORY SO FAR...

The evil sorcerer Drax has sworn to wreak an unspeakable doom on the people of the Jewelled City unless Princess Mariana is delivered to him. However, he has agreed that if a champion can be found who is able to defeat his demonic guardians, the Princess will be released. From the wastelands of the North, comes an unknown barbarian, a mighty warrior, wielding his broadsword with deadly skill. Can he vanquish the forces of Darkness and free the Princess? ONLY YOU CAN SAY...

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